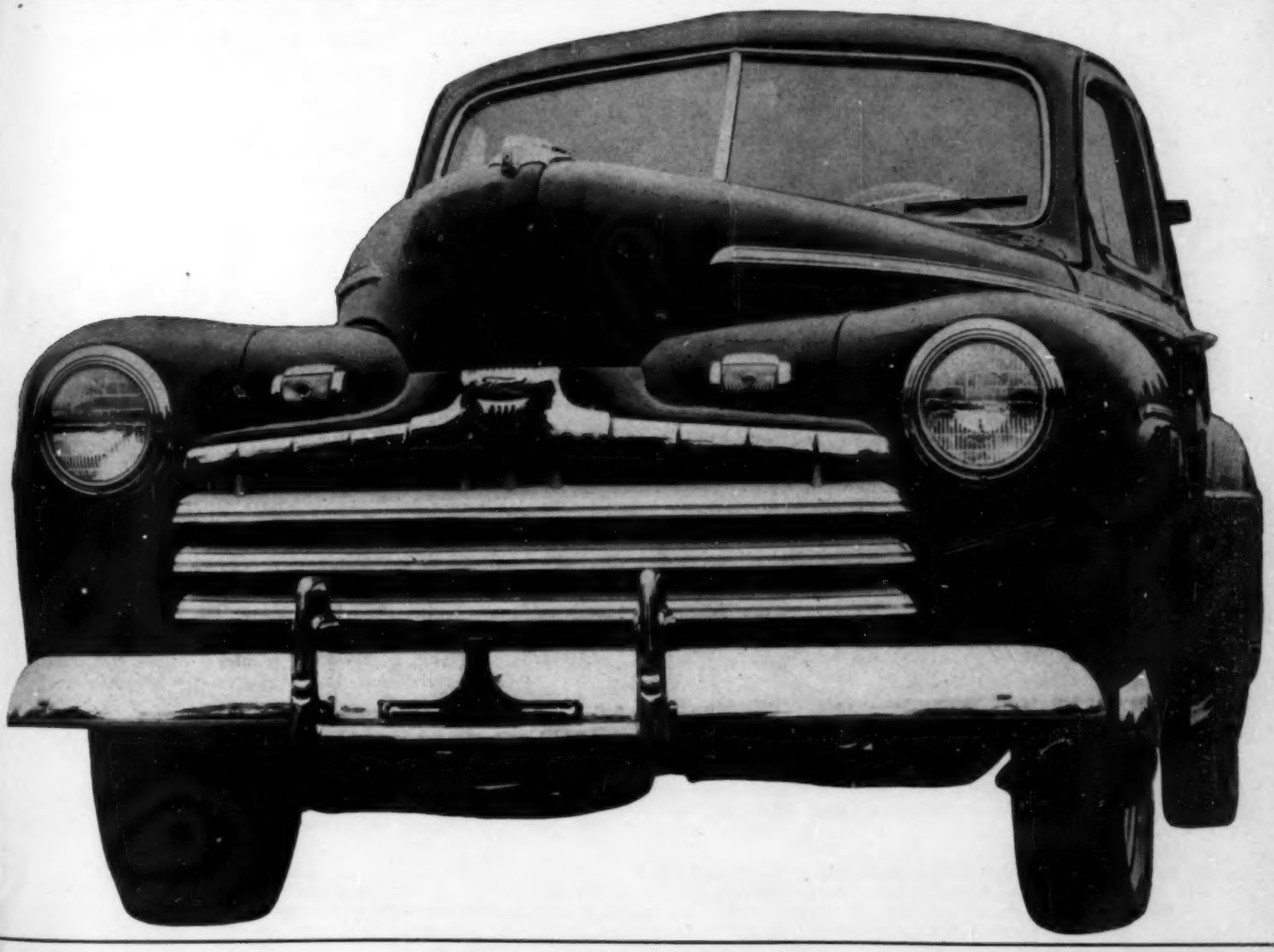
Consumer Reports

"FACTS YOU NEED BEFORE YOU BUY"

VOL. 10, NO. 10 Published Monthly by Consumers Union OCTOBER, 1945



BUYING A NEW CAR

CRACKERS & PRETZELS

THREE RADIOS

OLEOMARGARINE

SOLUBLE COFFEE

DDT OIL SPRAY

HOME HEATING

HYPERTENSION

Election of CU Directors

The following five Directors have been re-elected to the Consumers Union Board of Directors for a three-year term: Dr. Harold Aaron, Dr. Hartley Cross, Osmond K. Fraenkel, Adelaide Schulkind, Dr. Colston E. Warne.

17,728 ballots were cast by CU members in the voting. The results follow:

Dr. Harold Aaron	13,349
Dr. Colston E. Warne	13,088
Dr. Hartley Cross	11,739
Osmond K. Fraenkel	10,015
Adelaide Schulkind	8,318
Dr. Martha Potgieter	5,826
Dr. Joseph K. Folsom	5,375
Dr. Ralph B. Tower	5,083
Dr. Phillip Gamble	4,792

Election of Officers

The Board of Directors announces the re-election of the following officers of Consumers Union for the coming year:

President	Dr. Colston E. Warne
Vice President	Dr. Hartley Cross
Secretary	Dr. Harold Aaron
Treasurer	Bernard J. Reis

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Wartime Controls and the Consumer

The following statement of the consumer attitude toward wartime controls and their retention was broadcast by Dr. Colston Warne, president of Consumers Union, over the national network of the American Broadcasting Company. The statement was made as part of the "Washington Story" program on September 24th.

We consumers are bitter about the too-hasty liquidation of wartime controls. No family wants rationing or price control for one day longer than necessary. But neither do we want a mad scramble for goods or a runaway inflation, 1919 style.

With our nation's money supply at triple the prewar level, and with reconversion just started, we think it fantastic that the War Production Board rushed to liquidate its controls over allocations of scarce materials under pressure from business groups bent on immediate profits. We are likewise most critical of OPA's failure to continue the rationing of important consumer goods still scarce in supply; of the fact that it has weakened its reconversion program and has slackened its enforcement.

We consumers have been behind Chester Bowles; indeed, when the brickbats were flying hardest we seemed about his only supporters. We're still behind him, for he seems to be one of the few courageous Washington officials. But we don't like the way he has been allowing his organization to be decimated by budget cuts, without making a public protest. We don't approve of the big gaps which his assistants have torn in the price line in order to appease manufacturers. Moreover we are fearful of important pending changes in price control which OPA has framed but not yet announced.

Consumers Union contends:

(1) That we should share food with Europe, even if that means meat rationing this Winter. Ration points are a small price to pay for winning the peace and preventing starvation.

(2) That we should keep the lid on rentals and retain control over the pricing and allocation of building materials.

(3) That OPA and WPB should carry through their promised low-cost clothing program.

(4) That OPA should earn the right to continued consumer support by holding the price line; that it should maintain its organization intact in the face of continued business opposition.

Then—and only then—can we celebrate V-I Day—Victory over Inflation.

Consumer Reports

"FACTS YOU NEED BEFORE YOU BUY"

"Because it was established for the very purpose of aiding families to buy wisely, to avoid waste and to maintain health and living standards, and because it is the largest technical organization providing such guidance, Consumers Union recognizes a special responsibility to the nation. In full awareness of that responsibility, we pledge ourselves to do everything in our power to help Americans as consumers make the greatest possible contribution to the national need."—FROM A RESOLUTION ADOPTED ON DECEMBER 10, 1941, BY THE DIRECTORS.

VOL. 10, NO. 10 • OCTOBER 1945

TECHNICAL SECTION

MEDICAL SECTION

NEWS AND INFORMATION

GROUP ACTIVITY

REPORTS ON PRODUCTS

Ratings of products represent the best judgment of staff technicians or of consultants in university, governmental and private laboratories. Samples for test are in practically all cases obtained on the open market by CU's shoppers. Ratings are based on laboratory tests, carefully controlled use tests, the opinion of qualified authorities, the experience of a large number of persons, or on a combination of these factors. Even with rigorous tests, interpretation of findings is a matter on which expert opinion often differs. It is Consumers Union's pledge that opinions entering into its evaluations shall be as free from bias as it is possible to make them.

Three New Radios

"Not so good," is the verdict of CU's laboratory after testing three small — but expensive — receivers. Poor tone, poor construction and shock hazard were among the defects found

This is CU's Report No. 1 on postwar electrical products. And the upshot of Report No. 1 is that you had better go slow in buying your postwar radio.

Three brand-new postwar radio receivers were found in New York stores, and purchased for testing. The purpose of the tests was not so much to provide ratings of the sets as to see what kind of stuff was being put out by radio manufacturers who were among the first to get their products into the stores; and to see whether consumers could safely buy such radios, which are probably appearing under a multitude of new brand names all over the country.

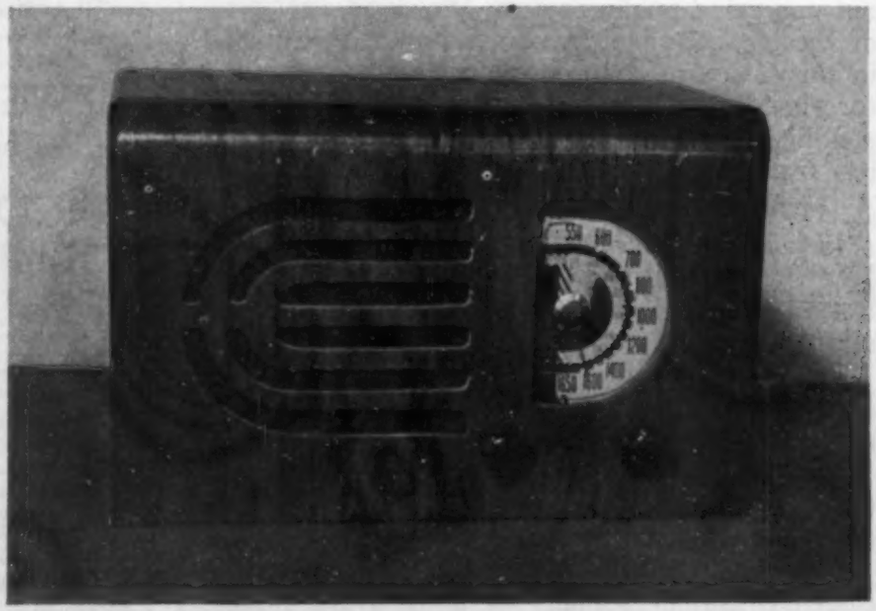
All three of the receivers were poor buys. All offered serious shock hazard; and all were grossly overpriced. In addition, each had other bad shortcomings.

All three—*Ultradyne, Minerva* and *Imperial*—were small table radios; they were priced respectively at $32.95, $39.95, and $44.95 plus Federal tax which amounts to 10% of the wholesale price. These prices were all approved by OPA; and if they represent OPA's idea of prewar prices, and OPA's pattern for postwar pricing of radios, heaven help the poor consumer!

In case you've forgotten what radios used to cost, here are some prices listed from the March 1942 issue of *Consumer Reports*, which carried ratings of 17 AC-DC table sets: $28.95 plus postage for a table-model radio with six push-buttons, with the Underwriters' seal, with treble control, and with a short-wave band; $28.95 (list) for a large midget with a three-gang tuning condenser (a feature which results in much improved reception, and is generally found only in more expensive radios); $27.95 plus postage for a large table-model radio-phonograph; $24.95 for a table-model radio-phonograph; and the remaining 13 radios were priced from $27 (list) down to $9.95 plus postage, including one large midget model with five push-buttons for $14.95 plus postage.

Actually, before the war, a consumer in any large city could get as much as 40% discount off the so-called list prices in buying a radio from a radio store. Or, if no direct discount was offered, the radio store could generally be counted on to give a substantial trade-in allowance on an old set. But you can be sure that for some time after radios really start flowing through the dealers' hands, there won't be discounts or trade-ins.

The most expensive of the radios tested—the *Imperial*—was sold, and presumably priced by OPA, as a six-tube set. To all intents and purposes, however, it was a five-tube set, with an additional "dummy" tube. True, there were six perfectly good tubes in the set and all of them were in use, but two tubes were doing the work normally done by one, and the two tubes were doing nothing that one tube could not do. In fact, by simply switching two wires in the set, CU's radio engineer was able to remove one of the tubes without affecting the

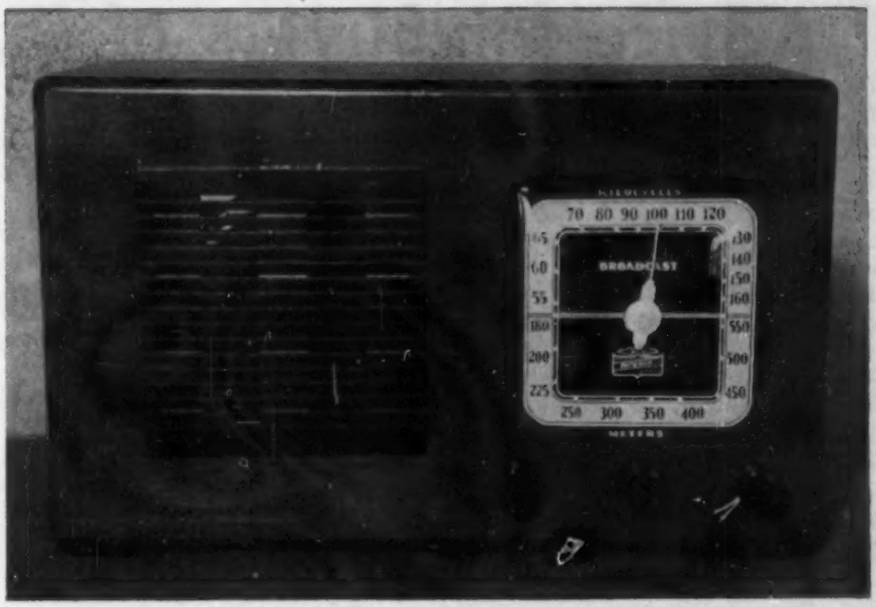


Regal's Ultradyne, at $32.95: the lowest-priced and the best of the three but still a poor buy if judged by pre-war standards.

radio's operation. This is a new use of the old dodge of dummy tubes, and CU is taking up with both the Federal Trade Commission and OPA, the propriety of selling—and pricing—such a radio as a six-tube set.

All three sets were put together with gross disregard of the hazard of electric shock. In all three sets, there were "live" metal parts exposed under the case, so that a person picking up any of the radios by the bottom—a normal way of picking up such radios—and touching a radiator, a faucet or any other grounded conductor at the same time, would run the risk of severe electrical shock and, though unlikely in any particular case, of electrocution. Cases of electrocution of persons who touch wet bathroom or kitchen fixtures with one hand, while holding the plugged-in radio with the other, have been reported in the press in past years. Furthermore, such radios offer a fire hazard, since they can easily cause a short circuit if they are placed on the radiator.

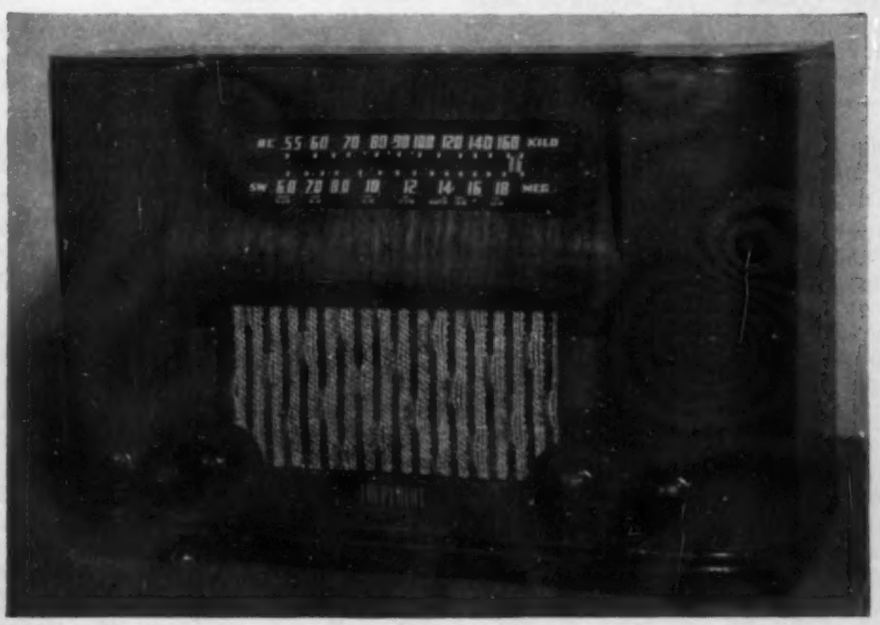
Safety regulations should bar the sale of such radios everywhere—as is now the case in some West Coast cities. The individual consumer's best protection against electrical hazard at the present time is to look for the Underwriters' Laboratories label pasted on the backs of approved sets. This label provides reasonably good assurance of safety. No radio as dangerous as any of the three tested would be permitted to carry the Underwriters' label.



The Minerva, at $39.95, had a very poor, boomy tone among other serious defects.

CU will test new radios as rapidly as their appearance on the market and CU's laboratory facilities permit. If possible, wait for test reports before you buy. If you must have a new radio at the earliest possible moment, you will probably do better to get a second-hand prewar model rather than a new one which may be designed poorly, made sloppily, and put together of odds and ends of left-over radio parts.

This situation will probably change by the end of the year, as more parts are produced, and as manufacturers go into full-scale production. Meanwhile, hold on to your money.



Highest-priced and worst of the radios was the $44.95 Imperial. Among other faults was its insensitivity at the lower-frequency end of the dial.

THE RADIOS

Ultradyne L-46 (Regal Electronics Corp., NYC). $32.95. Large midget model. Best set of those tested. Fairly good tone, sensitivity, selectivity, volume and whistle ("birdie") rejection. Somewhat objectionable hum; poor telegraph signal rejection. Volume could not be turned down entirely, though lowest volume was very low. Set had a loose connection which created a crackle when the cabinet was jarred. Construction generally poor. Serious shock and short circuit hazard. (This report is based on the second set examined. The first set purchased was practically unusable because of defects in parts or assembly.)

Minerva (Minerva Corp. of America, NYC). $39.95. Small table model. Very poor, boomy tone, which cannot be remedied by adjustment of the treble control. Serious shock and short circuit hazard.

Imperial Model 602 (Globe Electronics, Inc., NYC). $44.95. Small table model. Adequate sensitivity at high-kilocycle end of dial, but set became less and less sensitive toward lower end; practically dead at 550 kilocycles. Dial badly off calibration, so that stations did not come in on the right dial numbers. Difficult to tune because of "backlash" in dial. Fair tone quality. Poor treble control, which cut out lower as well as higher tones. Construction poor. Serious shock and short circuit hazard. Set had standard short wave band. Sold by Davega Stores, NYC. Vim Stores sold an apparently identical radio which was not tested, under the name **Globe** Model 602.

Advice for Buyers of Postwar Cars

Early models won't be much different from the prewar autos. Wait a while if you want to get a true postwar car, advises CU's automotive consultant

This article by Consumers Union's automotive consultant contains the best advance buying advice that can be given at this stage for those consumers who must—or in any case, intend to—buy a new passenger automobile at the earliest possible moment. It does not deal with the true "postwar" car designs, which are not expected to appear until the 1947 season. The discussion here is based on what advance information is available on the new 1946 models, and on the performance and design of the 1942 models of the same makes. As the 1946 cars actually appear, CU will give detailed critical appraisal of them in the Reports.

APPROACH TO BUYING

You can approach the purchase of a new car in one of three ways:

One is to shop around, find the dealer who will allow you the largest trade-in for your old car, and buy from him. This is an excellent way to end up with the most over-priced, the poorest, the least desirable (especially in point of future trade-in value) new car available.

Or, with an eye to the green lights of envy in the neighbors' eyes, you can select the largest, the shiniest, the most gadget-littered car the showrooms offer. Of course this may be what you want in a car; if it is, this is your best method of shopping. But even so, you may want to keep in mind that the dealer makes a far higher percentage of profit on the accessories he sells you than he does on the car itself; that at a given price level an overload of brightwork outside means skimping somewhere inside; that chromium is still scarce, and 1946-model chromium-plating will be thinner than ever, with consequent greater tendency to rust as the chromium wears off; that ornamental stainless steel is fine as far as it goes, but that strips of it wrapped around ordinary rustable steel aren't worth much in the long run.

The third—and by far the best—approach to buying your new car begins with your sitting down to a little thinking about what you want, how much you can spend, and what the market offers, before you see any dealers. Remember that a new car loses about 40% of its market value in the first 12 to 18 months; it may absorb as much as 10% to 20% of your income each year; and in the course of its lifetime, the cost of feeding it with gasoline will amount to just about what you paid for the car in the first place.

While you're doing your pre-purchase thinking, there's an alternative worth considering, if you have an old car that can be repaired and coaxed along and repaired for another year. You're likely to be in a much better position if you can put off your buying until then. A year from now, prices are expected to be stabilized on both new and used cars. And the models which will be produced then will have been freed of the "bugs" which are sure to be present in the early cars coming off newly-created assembly lines. Furthermore, in a year enough information will be available about at least some of the true "postwar" cars for you to decide whether or not you want to wait for them.

More on Cars

Prospective car buyers who want more information on cars of the present and the near future will find the following references helpful:

Consumer Reports, February 1945: A discussion of postwar autos and what may be expected in the next few years.

Consumer Reports, February 1942: Ratings of the 1942 models. If you must buy immediately, before 1946 ratings can be compiled, these will serve as a partial guide. The cars now being produced will differ from the 1942's only in minor details, it is expected.

In making the decision as to whether it will pay to make further repairs on your old car in its present age and condition, you may run into some difficulties. Actually, it depends pretty much on the car—how long you've had it, the distance it has run, who has been driving it and how. But the general rule by which at least one big fleet-owner operates may help you. He figures that when the total cost for maintaining the car (everything done to it from the time it was purchased, less the cost of the gas and oil) adds up to as much as the amount the car has depreciated in resale value, the time to trade it in has come.

If you do decide to buy a new auto, spend some time in analyzing what you want it to do for you, and what kind of car your driving habits require. Statistics show, for instance, that the average auto trip or "run" is only about 15 miles; only 1% of the runs exceed 30 miles. Compare this with your own driving. It may help you to overcome the usual tendency to buy more car than you really need.

POWER vs. ECONOMY

For the sort of driving mentioned above, a 125-horsepower, 18-foot-long car isn't needed. What it does is eat the heart out of your pocketbook and get in the way when you want to park. A car that is powerful enough to beat all competition in getting away at traffic lights costs more to operate than the car that starts with the rest of the crowd. Ability to perform at high speed is costly, too, whether or not you make use of it. For a car capable of high speed needs a big, powerful engine that loafs very wastefully. And if you're thinking of making use of the high speeds, better consider first the fact that most auto engineers are agreed that the average motorist is not capable of driving *safely* on any regular roads at more than 60 miles an hour. It's far better to set your sights on a top speed of 60 mph, and to forget the upper speed brackets.

On the other hand, if you travel mostly in mountainous country, with the car full of people, a small car (one with less than 80 horsepower) won't save you money. A larger car is desirable, too, if you're looking for a comfortable ride for your back-seat passengers. But 75% to 90% of actual driving needs (excluding, of course, prestige value) can be met satisfactorily by low-priced cars, and met at a saving in operating costs. Despite much talk by large-car dealers and owners, no actual figures have ever been submitted by them which show lower over-all operating costs than are obtainable with the *Ford, Chevrolet, Studebaker Champion, Nash 600, Hudson 20* or *Willys.*

WHAT TO EXPECT

The information available so far on the new "1946" cars indicates that they will be simply the old 1942 models, with minor changes such as are usually made from one year to the next. Bodies are expected to remain pretty much as they were, since neither manpower nor material for new body dies is available at this time. In view of this, some of the characteristics of the 1942 models may be worth reviewing.

PRICE: When you are told that the new 1946 model will be priced "only a little higher than the 1942," don't let yourself be persuaded that this makes them a bargain. The 1942 prices were about $100 higher than 1941 prices for equivalent models, so that 1946 prices cannot be rated as "prewar."

WEIGHT: The 1942 cars were considerably heavier than the models of previous years, and in some cases—notably the *Chrysler* lines—they had larger engines. New decorative material on the *Chevrolet* added 30 pounds to its weight, and required the use of new front springs. Actually, addition of non-essential weight always works against the buyer, since he has to pay for hauling it around for the lifetime of the car. With all that has been learned about weight-reduction during the war, the 1946 cars should weigh less rather than more than the 1942 models.

TIRES: The 1942 cars were, in many cases, under-tired. The tires used on them were not large enough to carry the cars plus the passenger load without excessive strain and wear on the tires. If such under-tiring is continued on the 1946 models, it will be fatal to the synthetic-rubber tires, which have less ability to withstand overload and abuse than do natural rubber tires.

Watch for . . .

Work on the following reports, among others, is either now under way or scheduled to begin soon:

- Electric Irons
- Phonograph Records
- Pipes
- Automatic Pencils
- Lipstick
- Compacts
- Small Loans
- Phonograph Needles
- Perfumes

FOURTH SPEED: All 1942 lines save *Plymouth* and *Mercury* originally offered as optional or extra-cost equipment a rear-axle ratio or fourth-speed drive of some sort, designed to provide increased economy of operation and longer car life. During the last few months of 1942 production, however, these options were abandoned. If they are again presented on the 1946 cars—as they should be—CU will give a critical evaluation of the various types as soon as they are announced.

THE BIG THREE: *Ford, Chevrolet* and *Plymouth* all reached a new high in size and power in 1942; they were also more generally "acceptable" in comparison with the higher-priced cars. Plymouth began using a new frame in 1942, resulting in a lower car; it had a larger but slower-running engine than previously, thus giving more capable and quieter performance. The *Fords* were made heavier, wider and lower, and further attempts were made to improve riding comfort. At that time, the *Ford 6* was considered more capable than the *Ford V-8* at moderate speeds, and it was slightly superior in gas mileage. The 1942 *Chevrolet* was little different from previous models except in appearance. Although there is little actual information available on the 1946 models of these cars, no new developments are expected which will change the order of merit assigned to the 1942 models: *Chevrolet, Ford 6, Plymouth, Ford V-8.*

ECONOMY GROUP: In 1942, there were available four cars which cost less to operate than the "Big Three" group. These were the *Studebaker Champion* (a consistent "Best Buy," and almost certain to remain so in the 1946 version), the *Nash 600, Willys* and *Hudson 20.* The *Nash 600* for 1946 has already been announced, and it will have few changes over the earlier model. *Willys* has announced the "civilian jeep," but so far has said nothing about passenger cars. Plans for the low-cost *Studebaker* have not yet been made public. It is likely that this "economy group" will have some new members soon, for the new "light" cars promised by *Ford* and *Chevrolet* for mid-1946 will undoubtedly fall into this classification, and Mr. Kaiser of ship-building fame may also have an entrant in this field.

OTHER MAKES: No new ratings of other brands can be attempted at this time, especially as the narrow price groupings assigned by CU in 1942 will no longer hold. On the basis of 1942 and earlier ratings, however, it seems likely that the following will rank high among the 1946 models: *Pontiac 6* and *Pontiac 8* (in their lowest-price forms, using the *Chevrolet* body shell); *DeSoto* (although the four-speed *Vacuumatic* transmission offered as optional equipment is not recommended); *Studebaker Commander* and *President* (which, though in themselves outstanding, suffer from poor dealer-service in some sections); *Cadillac* (especially with the optional axle, though it is acceptable with the *Hydramatic*). A long record of irresponsible engineering makes *Buick* a less reliable choice, sight unseen, than the *Pontiac 8,* which sells at about the same price.

When you go into the salesrooms to look at the 1946 cars, there is one broad question, aside from the matter of the car's individual characteristics, that you should inquire into: How has the car been bettered (a) as a result of wartime learning, and (b) from the correction of faults in the car found by car owners during the war years?

Improvements discussed below should be made in the new models;

they would make the new cars superior to the 1942's:

ENGINE: Does the engine have the new, super-accurate piston rings developed during the war? Is the wiring insulated with the new war-developed synthetics that are heat and moisture proof? Are the condenser and the coil either hermetically sealed or sealed in oil? Is the battery of only prewar capacity, and hence inadequate? Has anything been done to reduce starting-up wear, sludging and corrosion?

BODY: Has anything been done to keep the door-locks from freezing solid in the Winter? Do the window-glass channels, the anti-squeak material between the sheet-metal parts, and the air and dust seals around the doors and trunklid still freeze, soak up water, and then thaw so that the body starts rusting around them? Has anything been done to keep the dust seals from becoming unglued in a few months? Can water still get inside the body through the holes where the decorative strips are attached, with consequent rust formation? Will the body and sheet metal of the car rust through, as 1942 and earlier model cars have done?

CHASSIS: Will the muffler rust out as quickly as the old ones did? Will the manufacturer furnish a better muffler on the new car, even at extra charge? Have better bushings been installed on the knee action? Will the jack furnished with the car work without the aid of a contortionist or an Atlas? Has anything been done to eliminate rattles resulting from either looseness or excessive wear?

CONTROLS: Will the clutch pedal still come back against the floor board as wear takes place, so that the clutch will slip, and thereby burn out? Are the control buttons made of plastics which get brittle and break off in cold weather? Is it still necessary to do as much twisting of the steering wheel to get around a corner, as it was in previous models? Do the brakes (if *Bendix*-type or *GM*) "grab" when the air is damp, or after rain? Or do they (if *Lockheed*-type) emit a high-pitched squeal when the car is being slowed down?

The answers to these and other questions will show whether car manufacturers are planning to put out a really good product, or whether they plan to coast along on the pent-up demand for as long as it will carry them.

Test Report on DDT Sprays

Many contain so little DDT as to be of little or no value as long-lasting insect-killers, tests of 14 brands reveal

As pointed out in the last issue of the *Reports*, the best form in which to use DDT in the home is, in most cases, as a 5% oil spray. But if laboratory tests of 14 available brands of DDT-in-oil insecticide are typical, a 5% solution of DDT is not easy to find. For of the 14 brands analyzed in CU's laboratory for DDT content, only one was found to meet the 5% minimum recommended by government agencies for use as long-time protection against insects.

The over-all situation may turn out to be less gloomy, however. This report covers only a few of the brands which are coming on the market. It is presented as a preliminary guide, for those who want to make use of the new insecticide at the earliest possible moment. As new brands reach the national market, CU will analyze and report on them.

Labels on the brands tested were either inadequate or inaccurate in 12 of the 14 cases. Eight labels gave no indication of the amount of DDT the bottles contained; actually the contents ranged from less than 1% to over 5% DDT. Three brands labeled as containing 5% DDT actually contained from 3.1% to 4.5%. Two brands boasting 3% DDT content, each had 2.5% or less. Only one brand, which claimed to contain 2% DDT, actually met its label claim.

HOW MUCH DDT?

The thing that makes DDT different from other insecticides is that, if used in the correct concentration, it does more than just kill the insects it touches. Its great value is as a *residual* insecticide; its lethal action continues for some time after the original spraying. Actually, DDT's effectiveness as a *contact* insecticide is quite limited. It takes from about ten minutes to several hours for most insects to die from DDT's effect, which gives mosquitoes a chance to get in quite a bit of damage before they succumb. Many of the old-style insecticides are much more efficacious if quick-killing action is the aim.

Presumably, then, persons who use DDT do so because they want the lethal action to continue for as long as possible after the original spraying. For this effect, you must not only use DDT, but use it in the correct concentration. And research shows that a concentration of 5% DDT is needed to give the maximum protection period—several months.

Lower concentrations are effective for shorter periods. For a place where you intend to stay for only a few weeks, spraying with a 2% to 3% DDT solution would be quite adequate. You might be satisfied to use a similar DDT concentration against certain insects which appear for only a few weeks during the year. When the amount of DDT in a spray falls below 2%, it is hardly worth using.

Many sprays advertised as containing DDT are quite effective as contact insecticides, despite their low DDT content. But DDT should not

More on DDT

More detailed instructions for the use of DDT oil spray, as well as discussion of the other forms of DDT and their uses, were published in the September 1945 issue of the *Reports*.

DDT in oil is recommended for use in walls, ceilings, bedding, draperies and furniture, to give protection against insects for several months. When the solution is used in concentrations weaker than 5%, the protection is of shorter duration.

The statements on toxicity of DDT in this report and in the following, on the DDT "bomb," are based on information obtained by CU from government sources, including the Bureau of Entymology and Plant Quarantine of the U. S. Department of Agriculture and the U. S. Public Health Service.

be added to an insecticide—or advertised as being present in it—unless there is sufficient to produce the long-time effect characteristic of DDT. The buyer who purchases an insecticide with DDT on its label has the right to expect the unique kind of protection which DDT can offer. For this reason, brands containing less than 2% DDT were considered "Not Acceptable," regardless of their other ingredients.

In the ratings which follow, "Acceptable" brands are listed in order of increasing cost per quart, figured in terms of what each solution would cost if it contained 5% DDT (figures in parentheses). One sample of each brand was tested.

ACCEPTABLE

Ultra Insect Spray with 5% DDT (Ultra Chemical Works, Inc., Patterson, N. J.). $1.74 for 1 gallon. Contained 4.1% DDT (54¢).

Presto Insecticide Triple Strength (Presto Exterminating Co., NYC). 79¢ for 1 qt. Contained 5.8% DDT (68¢).

Nosect Super Grade AA with 5% DDT (Chemical Specialties Co., NYC). 79¢ for 1 qt. Contained 4.5% DDT (88¢).

New Formula Tote Insect Spray (Speed Chemical Co., Brooklyn). 49¢ for 1 qt. Contained 2.4% DDT ($1.02).

Intoxin with 5% DDT (Ultra Chemical Works). $1.29 for ½ gallon. Contained 3.1% DDT ($1.04).

My-T-Kil (My-T-Kil Insecticide Co., NYC). 49¢ for 1 qt. Contained 2.2% DDT ($1.11).

Darah DDT with 3% DDT (Darah Sales Co., Newark, N. J.). 49¢ for 1 pt. Contained 2.4% DDT ($2.04).

DDT Sure Dead Insecticide (Double B Products Co., Hartford, Conn.). $1 for 1 qt. Contained 2.4% DDT ($2.08).

Activated Insect Spray with 2% DDT (Lebrest, Inc., Long Island City, N. Y.). 99¢ for 1 qt. Contained 2.3% DDT ($2.16).

"Miracle" DDT Insecticide with 3% DDT (H&M Distributing Co., Asbury Park, N. J.). 75¢ for 1 pt. Contained 2.5% DDT ($3).

D&P Double DT (Doggett-Pfeil Co., Springfield, N. J.). $1 for 1 pt. Contained 3% DDT ($3.33).

NOT ACCEPTABLE

(Contained less than 2% DDT)

Fly Funiral with DDT (McKesson & Robbins, Inc., NYC). 49¢ for 1 pt. Contained 1.9% DDT ($2.58).

Great Western Insecticide — Double Strength (Great Western Insecticides, NYC). 69¢ for 1 qt. Contained 1.2% DDT ($2.88).

Monitor DDT Insect Spray (Criterion Chemical Co., Brooklyn). 59¢ for 1 qt. Contained 0.9% DDT ($3.28).

The DDT Bomb

The DDT-dispensing aerosol bomb is the latest of the DDT insecticides to reach the consumer market. The "bomb" is a metal cylinder containing DDT mixed with freon, a liquefied gas, and one or two other chemicals, all under high pressure. When a valve is opened, the DDT solution comes from the nozzle in the form of a finely dispersed mist, which floats in the air for several hours before it settles.

The mist is fatal to all insects which fly through it: flies, moths, mosquitoes, etc. But it does not affect non-flying insects, such as cockroaches, ants and bedbugs. Furthermore, there is practically no residual effect from the DDT after the spray has settled.

Not all DDT bombs have the same composition. According to the U. S. Bureau of Entomology and Plant Quarantine, a 3% DDT concentration is the most satisfactory for bombs to be used in the home; less than 3% is inadequate. Some firms are marketing bombs containing as much as 10% DDT. This stronger solution is satisfactory so far as killing insects is concerned, and in fact the job can be done in a shorter time than with the lower concentration. But experience shows that the more concentrated solution tends to clog the bomb nozzle. A recommended bomb formula contains 3% DDT, 4% pyrethrin, 5% cyclohexane (a solvent) and 88% liquefied freon.

HOW IT WORKS

The metal bomb cylinder is topped with a nozzle, which can be turned to release the DDT spray. On the other end is a safety cap, which releases the contents if the inside pressure becomes too high. The construction of the bombs is such that they can safely withstand high temperatures and rough handling, in accordance with the requirements of the Interstate Commerce Commission.

In use, the bomb is opened simply by turning a nozzle; a 3% DDT bomb should be allowed to remain open eight seconds for every thousand cubic feet under treatment. The average room contains about 2,000 cubic feet. Count the time as beginning when the nozzle is first opened,

Both are labeled DDT, but Monitor (left) contained less than 1%, while Presto's DDT content was almost 6%, the highest of those tested.

not when the mist first becomes visible. If you do not have a watch with a second hand, you can estimate seconds by counting "one thousand and one, one thousand and two," etc., at the normal speaking rate. It takes about a second to say "one thousand and one."

SAFETY

The aerosol bomb is safe to use at home. Human beings and animals can safely remain in a room newly treated with this form of DDT, though they will probably not find it comfortable to do so because of the odor. DDT which is inhaled remains in the upper part of the respiratory tract, and is expectorated. However, all food should be covered during and for several hours after spraying, and goldfish bowls should be covered.

The spray from the aerosol bomb is not inflammable, and there is no fire or explosion hazard involved in its use. During the war, aerosol bombs were safely stored on shipboard near the boilers. No explosions were reported. Such extreme conditions are not likely to be encountered in the home, in ordinary use.

COST

Aerosol bombs containing DDT are available at retail for about $4. Some stores offer filled bombs at $2 if you bring back the case of a used bomb. Bombs contain enough solution under pressure to give a continuous spray for 10 to 13 minutes. When used as described above, this is adequate for spraying 35 to 50 average-sized rooms. This figures to something like 10¢ a room for the first bomb (at $4), about 5¢ a room for use with "refills."

OLEOMARGARINE

Ratings of 20 brands, and a report on the status—nutritional and legislative — of this popular spread and shortening

The battle of the fats—butter vs. oleomargarine—goes merrily on in the halls of Congress and in the advertising pages of newspapers and magazines. But all except the most diehard of the butter advocates must admit that margarine is here to stay; that it has earned its place as a permanent part of the American diet. A major factor in margarine's popularity has been its low red-point cost, as compared with butter. But many housewives who have used it for the first time as "emergency rations" will continue its use when both butter and margarine are point-free; for they have learned that margarine is as nutritious and as satisfactory for cooking, and much cheaper than butter; and that the better brands of margarine are difficult to distinguish from butter in taste.

WHAT IS MARGARINE?

Margarine was a war-baby—the product of a competition instigated by Napoleon III, who offered a prize to anyone who could devise a cheap butter substitute at the time of the Franco-Prussian War. The prize-winning entry was made from beef fat (oleo), from which it derived its name. Later its flavor was improved by replacement of the beef fat wholly or partially with coconut, palm-kernel or similar oils. More recently, soybean and cottonseed oils have been used as margarine's fatty ingredients. Of the 20 brands of margarine included in CU's tests, only one contained animal fat.

Before it can be used in oleomargarine, the fat must be highly refined, so that it becomes practically flavorless. Margarine derives its "butter" flavor from the ripened milk with which it is churned or from the artificial flavoring, diacetyl, or both. This diacetyl is the same flavoring substance which occurs naturally in butter. In general, margarine is made with about 80% fat, 17% ripened (soured) milk, and small amounts of salt, flavoring, emulsifiers, preservatives and vitamins. Permissible ingredients, the amounts allowable and the label statements required are all precisely set forth in definitions and standards of identity promulgated by the Food & Drug Administration in 1941. The minimum vitamin A level required by these standards is 9000 U.S.P. units per pound—considered as the year-round average for butter.

NUTRITIONAL VALUE

Much has been written and said regarding the comparative nutritional worth of butter and oleomargarine. Significantly, much of the research which "proves" butter to be nutritionally superior comes from universities operating in dairy States, or from laboratories endowed by dairy interests. Virtually all other researches rate the two products as just about equal, both nutritionally and in ease of digestion.

A statement from the Council on Foods and Nutrition of the American Medical Association sums up the matter neatly:

1. Margarine contributes primarily fat to the diet.
2. The fat is equal in digestibility and caloric value to other food fats.
3. The standardized vitamin A content of fortified margarine . . . contributes this nutritional factor in amount equivalent to average butter in accordance with information available. . . .
4. The milk solids other than fat (1 percent) present in both butter and margarine are of negligible nutritional importance.
5. When margarine is fortified with vitamin A the investigations that have been made lead to the conclusion that it can be substituted for butter in the ordinary diet without any nutritional disadvantage.

FLAVOR & COOKING

Numerous "blindfold" taste tests have proved beyond doubt that most persons can't tell the difference between butter and the better brands of margarine. If anything, the "butter" flavor of margarine tends to be rather more consistent, as the amount of diacetyl added to it is far more easily

controlled than is the diet of the cow which produces the butter. Margarine has an additional edge over butter in that it has less tendency to become rancid, and therefore continues to taste "fresh" long after butter has developed off-flavors.

As for cooking and baking, housewives have found that margarine can do everything that butter can, and in most cases without any change in either recipe or cooking technique.

MARGARINE AND TAXES

The obsolete Oleomargarine Act of 1886, as amended in 1902, imposes Federal taxes on manufacturers, wholesalers and retailers of margarine, thus giving oleomargarine the dubious distinction of being the only foodstuff to be penalized for its very existence. Taxes on oleomargarine colored yellow are even higher than on uncolored margarine, presumably to prevent unscrupulous manufacturers from substituting it for butter, thus deceiving consumers. Obviously the anti-margarine interests aren't trusting the Food & Drug Administration—the agency which takes care of fraud and misrepresentation in other foods—to do this job for them.

A minor detail that the butter interests neglect to publicize is that the "natural" yellow color of butter is not always put there by the cow. During the Winter season, when the cows are on dry feed, their butter does not have the yellow color the market demands, and producers are allowed to "pep it up" to the desired golden hue through the addition of yellow coloring—the same that can't be used on margarine without payment of a high penalty.

Even more ironic, perhaps, is the fact that most of the margarine manufactured today from cottonseed, soybean and other vegetable oils is naturally yellow in color. In order to avoid paying additional taxes, manufacturers must put the naturally-colored margarine through a bleaching process, then put a little envelope of dye into the container in which the whitened margarine is packed, and instruct the housewife to stir it in herself.

A serious angle in this business of coloring margarine for home use is the waste of fats involved. Anyone who has tried doing the job knows that it is impossible to remove a good coating of the colored material from the mixing bowl. Multiply this by the thousands of mixing bowls used daily in the tedious job of mixing color into margarine, and you have a very substantial amount of much-needed fat going down the kitchen drain. If the manufacturer could do the coloring on a mass production scale, this leak in the fat supply could be saved.

In addition to the Federal taxes on oleomargarine, many States—especially those in the dairy areas—impose prohibitively high State tariffs against it. Yet even at that, they were unable to curb margarine's rising popularity during the high-point butter days. A clear indication of this is shown in the oleomargarine taxes collected by the dairy state of Wisconsin. In 1941, the total tax collection on this item was $16. In 1944, margarine tax collections totalled $170,878.

MARGARINE TESTS

Twenty brands of oleomargarine were tested by CU consultants. Tests included the following:

KEEPING QUALITY: This was determined by means of "peroxide number," found before and after the samples were given an accelerated "aging" equivalent to approximately three months' refrigerator storage. This is a chemically accurate method for finding out how rapidly the product tends to become rancid.

SMOKE POINT: A fat having a high smoke point is better for frying than one with a low smoke point. All the margarines tested were satisfactory in this respect.

FREE FATTY ACID: This is an indication of the quality of the oil used in making the margarine. A low free fatty acid content indicates a high degree of refining, and is preferable.

MOISTURE: Federal regulations require that margarine contain no more than 16% moisture by weight; all brands tested met this requirement.

SOFTENING POINT: A spread having too low a softening point becomes mushy at room temperature, and is unpleasant to use; if the softening point is too high, the product is hard to spread. All the oleomargarines tested had softening points within a satisfactory temperature range.

FLAVOR: Odor, flavor and degree of saltiness were judged in this grouping. Flavor and odor were found rather variable, ranging from products so bland as to be practically tasteless to those with strong butter flavor. There was also considerable variation in the degree to which the products were salted.

Though there were differences in

Mixing the yellow coloring into margarine is both messy and wasteful, but it's a choice of doing it yourself, using the margarine uncolored, or paying a prohibitive tax for the colored product.

the various scoring factors among the different brands, all the brands tested were judged "Acceptable" both chemically and in odor and taste.

In the ratings which follow, brands are listed in estimated order of over-all quality, based on the tests described above. Since individual flavor preferences vary from person to person, greatest consideration was given to the objective chemical tests in determining the order of the ratings. All prices given include Federal tax, but no State taxes.

ACCEPTABLE

(In estimated order of over-all quality. Prices given are for one pound.)

Southern Gold (Southern Margarine Co., Greenville, S. C.). 30¢. Colored. Available in the South.

Mayflower (Armour & Co., Chicago). 25¢. Available nationally.

Blanton Creamo (Blanton Co., St. Louis). 26¢.

Sweet Blossom (Friedman Mfg. Co., Chicago). 26¢. Formerly called Cotton Blossom. Available east of Kansas and in Texas.

Churngold (Churngold Corp., Cincinnati). 26¢. Available east of the Mississippi except in Wisc. and Minn.

Allsweet (Swift & Co., Chicago). 26¢. Available nationally.

Nucoa (Best Foods, Inc., NYC). 26¢. Available nationally.

Richmade (Harrow-Taylor Co., Kansas City, Mo.). 37¢. Colored. Available in N. Y., Boston and the Midwest.

Dixie (Capital City Prod. Co., Columbus, O.). 25¢. Available in New England, the South and Midwest.

Mrs. Filbert's (J. H. Filbert, Inc., Baltimore). 24¢. Available in the East and Ohio.

Nutley (A&P, NYC). 18¢. Available nationally at A&P Stores.

Durkee's (Durkee Famous Foods, Berkely, Calif.). 22¢. Available in the East.

Sunnybank (Coldstream Prod. Co., San Francisco). 17¢.

Dalewood (Interstate Cotton Oil Refining Co., Sherman, Tex.). 22¢.

Parkay (Kraft Cheese Co., Chicago). 26¢. Available nationally.

Keyko (Shedd-Bartush Foods, Inc., Detroit). 25¢. Scored low in chemical tests. Available east of the Rockies.

Jelke's Good Luck (John F. Jelke Co., Chicago). 26¢. Scored low in chemical tests.

Wilson's Certified (Wilson & Co., Chicago). 26¢. Scored low in chemical tests. Available nationally.

Blue Bonnet (Standard Margarine Co., Indianapolis). 26¢. Scored low in chemical tests.

Marigold (Armour & Co.). 18¢. Animal and vegetable fat. Scored low in chemical tests. Available in Ill., Ind. and Mich.

Soluble Coffee

When it is good, it's very good, but when it is bad, it's undrinkable, a group of tasters report after sampling ten brands

Soluble coffee is not precisely a "war baby"; in one form or another, it has been on the market for some 35 years. But until the war came along, only about 1% of family coffee consumption was in the form of soluble coffee. With the rationing of ordinary coffee during the early part of the war, however, many habitual coffee drinkers turned to soluble coffee to eke out regular supplies. And a goodly number of those who began drinking soluble coffee out of necessity continued its use out of preference. For they found in the soluble product a quick and easy way to brew a cup of coffee with no more equipment than that needed to heat water. Or, for Summertime iced coffee, the whole operation could be carried out with the aid of nothing more than a teaspoon and a glass of iced water.

Hardly had these persons been converted to soluble coffee, however, when the government announced its withdrawal from the civilian market. But on June 1, 1945 the War Food Administration released a substantial portion of the total production to civilian use. As this report is written, soluble coffee production is booming, and new brands are appearing on the market at a rapid rate.

"PURE" vs. "FILLED"

There are two types of soluble coffee—those which are pure coffee extract, and those which contain, in addition to the coffee, carbohydrate "fillers" such as dextrins, dextrose and maltose. Sellers of pure coffee point out that theirs is the "real thing," with nothing added. Advocates of the "filled" coffees (generally labeled "cafe") maintain that the addition of the carbohydrates "locks in" the coffee flavor and aroma, and that the added bulk makes for convenience in measuring.

But while the rival claims of the "hundred percenters" and the "cafe" makers provide good copy for the advertising men, CU's taste tests indicate that one type can be as good—or as bad—as the other.

CU's "taste panel" for the ten brands of soluble coffee included in this test was made up of five persons, all of whom habitually drank four or more cups of coffee daily, and drank it unsweetened and black. Two of the panel's members were accustomed to drinking soluble coffee every day for lunch; ordinary coffee at other times. The other three members of the taste panel had tasted soluble coffee on occasion, but they had used it only "for emergencies," because they "didn't like it." It was interesting to note that, as the tests progressed, the latter group found themselves acquiring a taste for the soluble coffee, and considered them more acceptable than when they were first tasted.

HOW TESTS WERE MADE

In the first series of taste tests, the soluble coffees were prepared in accordance with instructions, and the tasters were asked to rate them as "Good," "Fair" or "Poor"; to indicate the presence of off-flavors, if any; to note whether the coffees were satisfactory as to clarity and absence of sediment; to indicate whether the strength was too weak, too strong, or satisfactory; and to state whether the sample was as good as, better than or worse than an ordinary cup of coffee. Results of the first round of tests showed that, in the judgment of the tasters, almost all of the coffees were too weak when made according to label instructions.

In the second and third experimental rounds, therefore, the strength of the brew was increased, in an attempt to bring the coffees up to a strength which would satisfy all the tasters. In practice, this was found to be impossible. A strength that was just right for Taster A was considered too strong by Taster B; the strength Taster B considered too weak was just right for Taster C. And tasters found it impossible to judge flavor as separate from strength; a coffee that was too weak or too strong was rated at best only "Fair"—generally, "Poor."

For this reason, a fourth series of all the coffees was made up and

tasted, with each brand of coffee made up to each individual taster's preferred strength. The ratings are based on the flavor score at this optimum strength.

Instant Maxwell House (a "filled" soluble coffee) received top score for flavor; it was considered as good as coffee by three of the five tasters. *Kellogg's Instant All-Coffee* (a 100% coffee extract) rated a close second.

In the soluble coffees, as in real coffee, much of the flavor quality depends on the quality, the freshness and the roast of the coffee used. The process used in extracting the coffee and in drying the extract is also an important factor.

Soluble coffees are not, as many people suppose, free from caffeine. But the various processes used in extraction do appear to influence caffeine content. The average cup of coffee, made in the ordinary way, contains 1.5 grains of caffeine, more or less. The caffeine contents of the soluble coffees, when made according to the average optimum strength, ranged from 0.8 grains per cup (*Nescafe*) to 2.6 grains per cup (*Maxwell House*).

When made in accordance wtih directions, most of the brands cost about a cent a cup, more or less—approximately the same as ordinary coffee brewed from a medium-priced blend. When brewed to optimum strength, however, the cost per cup ranged from 0.8¢ to 1.8¢.

It does not seem likely, at this time, that soluble coffee will replace the coffee pot for everyday family use. But increasing numbers of coffee drinkers are certain to find it a convenience for making a single cup of coffee, for office lunches, for hikes and picnics and for quick iced drinks. Housewives will find it useful, too, as a concentrated flavoring for puddings, cakes, ice cream and other desserts.

In the ratings which follow, brands are listed in order of taste score, based on the individual optimum strength for each taster. Prices and caffeine contents are based on the strength considered most satisfactory by the majority of the tasters. Brands near the top of the list closely resembled ordinary coffee; those rated low were unanimously rejected.

Brand and Manufacturer	Cost	Teaspoons per Cup According to Directions	At Optimum Strength Level Teaspoons per Cup	Cost per Cup	Grains Caffeine per Cup
Instant Maxwell House* (General Foods Corp., NYC)	30¢ for 4 oz.	1 Rounded	1½	1.5¢	2.6
Instant All-Coffee (John L. Kellogg & Co., South Elgin, Ill.)	$1.59 for 8 oz.	½	1	1.7¢	1.7
Barrington Hall Coffee (Baker Importing Co., Minneapolis)	$1.26 for 5 oz.	½	1	1.8¢	1.5
Forbes Pure Instant Coffee (Jas. H. Forbes Tea & Coffee Co., St. Louis)	67¢ for 4 oz.	½ to ¾	1	1.3¢	1.7
Borden's Instantly Prepared Coffee (Borden Co., NYC)	39¢ for 2.5 oz.	1	1	0.9¢	1.1
Nescafe* (Nestle's Milk Products, Inc., NYC)	34¢ for 4 oz.	1	1¼	0.9¢	0.8
Caffe B,* (Caffe B, Vitamin Corp., NYC)	44¢ for 3 oz.	1	1¼	1.6¢	0.9
G. Washington's Instant Coffee (G. Washington Coffee Refining Co., Morris Plains, N. J.)	33¢ for 2 oz.	½	¾	0.8¢	1.2
Harrison's Pure Soluble Coffee (Harrison Co., NYC)	67¢ for 4 oz.	⅓	¾	0.9¢	0.9
Sol Cafe Coffee Extract* (Great Star Soluble Coffee Co., NYC)	29¢ for 4 oz.	1	2	1.2¢	1.2

* Contained carbohydrate "fillers" in addition to coffee extract.

CRACKERS and PRETZELS

Some recommendations based on taste tests of 31 brands

To help you choose brands of crackers and pretzels which are apt to meet with approval, CU conducted taste tests on several varieties of both. Twenty brands of crackers and eleven brands of pretzels were tested in CU's usual taste test procedure. Included in the tests were *Ritz*-type, cheese, butter and whole-wheat crackers, and the familiar three-ring pretzels and pretzel sticks.

The main ingredients of both pretzels and crackers are flour, shortening, leavening, salt, and in some types, condiments such as sugar or cheese. Crackers are made in the same way as bread, except that the dough is made stiffer. The dough is rolled in long sheets and passed through cutting machines. By changing the dies on these machines, various sizes and shapes of crackers can be obtained. The proper blending of ingredients and careful baking are not enough, however, to insure a crisp, fresh, good-tasting product. Proper packaging to keep out moisture is of vital importance in retaining the original freshness. Generally, crackers are wrapped in several sheets of glassine or transparent cellulose sheeting, in addition to their cardboard box. If a cracker becomes soggy after the box has been opened, crisping in the oven for a few minutes will usually restore its original freshness.

In the taste tests, the unidentified crackers and pretzels were served to a group of ten people. Some interesting facts were noted in the results of the tests: Generally, butter crackers of the *Ritz* type were considered "Good" by most of the tasters; cheese crackers generally rated "Fair"; whole wheat crackers, "Poor." All but one brand of pretzels rated "Good" or "Fair." There was a very high degree of consistency

between duplicate taste scores of a brand, and a relatively high degree of agreement among the individual tasters.

Ratings are based on taste scores alone. They are not intended to tell you what you will like, but rather to indicate which brands are worth trying. Brands are listed in order of decreasing taste score within each group.

Crackers

GOOD

Ritz (National Biscuit Co., NYC). 14¢ for 8 oz. Available nationally.
Crax (Megowen Educator Food Co., Lowell, Mass.). 19¢ for 16 oz.
Hi Ho (Loose-Wiles Biscuit Co., NYC). 25¢ for 16 oz. Available nationally.

FAIR

Ivins Butter-Flavored Thins (J. S. Ivins' Son, Inc., Philadelphia). 20¢ for 12 oz. Available in Philadelphia, Washington, D. C. and Allentown, Penna.
Nabisco Cheese Squares (National Biscuit Co.). 17¢ for 7 oz. Available nationally.
Burry's Cris-Bix (Burry Biscuit Corp., Chicago). 15¢ for 10 oz.
Nabisco Cheese Pix (National Biscuit Co.). 17¢ for 8 oz. Available nationally.
Frank Burns Toasted Elks (Frank Burns Inc., Philadelphia). 26¢ for 21 oz.
Champion Flake (National Biscuit Co.). 19¢ for 16 oz.
Koeppen's Snappies (Ernst Koeppen, Oradell, N. J.). 57¢ for 16 oz. Available nationally.
Sunshine Cheese-It (Loose-Wiles Biscuit Co.). 15¢ for 6 oz. Available nationally.
Elmer's Chee-Wees (Elmer Candy Co., New Orleans). 31¢ for 7 oz.
Burns Cracked Wheat (Frank Burns Inc.). 14¢ for 7 oz.
Ivins Buffet Wafers (J. S. Ivins' Son, Inc.). 23¢ for 12 oz.
Ivins Cracked Wheat Thins (J. S. Ivins' Son, Inc.). 12¢ for 6 oz.

POOR

Burns Thins (Frank Burns Inc.). 16¢ for 7 oz.
Burry's Snifties (Burry Biscuit Corp.). 40¢ for 10 oz.
Burns Trenton (Frank Burns Inc.). 22¢ for 16 oz.
Macy's Wheat Crisps (R. H. Macy & Co., NYC). 16¢ for 8 oz.
Venus Wheat Wafers (Venus Baking Co., Watertown, Mass.). 25¢ for 13 oz.

Pretzels

GOOD

Nabisco Very Thin Pretzel Sticks (National Biscuit Co.). 16¢ for 7¾ oz. Available nationally.
Tritzels (Perfect Foods Inc., Lansdale, Penna.). 17¢ for 8 oz.
Dutch Treat Butter Pretzel Sticks (Vitality Foods, Brooklyn). 8¢ for 5 oz. Available nationally.
Nabisco 3 Ring (National Biscuit Co.). 16¢ for 9 oz. Available nationally.
Crispa Salty Thins (Blaney Bakeries, Inc., Philadelphia). 13¢ for 6 oz.

FAIR

Burry's Celery Pretz-Stix (Burry Biscuit Corp.). 13¢ for 10 oz.
Nabisco Slim Jane Pretzel Sticks (National Biscuit Co.). 11¢ for 5¾ oz. Available nationally.
Burry's Better Pretz-Stix (Burry Biscuit Corp.). 17¢ for 10 oz.
Sunshine Teeny Twist (Loose-Wiles Biscuit Co.). 11¢ for 6 oz. Available nationally.
De Luxe Pretzies (Pioneer Specialty Co., Brooklyn). 26¢ for 16 oz.

POOR

Cocktail Sticks (A&C Packing Co., NYC). 10¢ for 3½ oz.

Ritz: judged the best of the crackers by the taste panel.

A New Test Method for Vacuum Cleaners

When *Consumer Reports* published its last prewar report on vacuum cleaners in November 1941, the ratings of the twenty brands were based on a new method of testing vacuum cleaners developed by Consumers Union laboratories. The CU method is, so far as is known, the first to make possible accurate and easy laboratory comparison of vacuum cleaners, using *naturally dirtied* rugs.

The dirt-removing properties of vacuum cleaners have generally been tested by either of two methods. The first involved spreading a measured amount of synthetic dirt (sand, chalk and vaseline) over a clean rug, then measuring how much of the dirt was removed by the cleaner in a given time. The second method used a naturally-dirtied rug, and called for running numerous comparative tests of a pair of cleaners over adjacent squares of it, until a sufficient number of pairs of the squares was cleaned to assure that the average square covered by sweeper A had been as dirty as the average square cleaned by B.

The artificial-dirt method permitted relatively simple comparison of cleaners, but it produced results which did not necessarily correspond to actual use. And the repeated adjacent-square method was much too time-consuming to be practical. Because of these drawbacks in existing methods, the latest revision of the Federal Specification for Electric Portable Vacuum Cleaners did not include any test for dirt removal.

In 1940, CU technicians began experiments on a test method which involved comparison of two cleaners on the same square, rather than on adjacent squares of a naturally-dirtied rug.

The basic idea is this: If an area of rug is cleaned for a given time, and the amount of dirt removed is weighed, then if the process is repeated several times with the same cleaner on the same area of rug, a curve can be plotted showing the rate

of dirt removal of that cleaner as less and less dirt remains in the rug. But if a second cleaner, either better or worse than the first, is substituted for part of the run, then the difference will be reflected in the resultant curve, and the curve will indicate whether the second cleaner is better or worse than the first.

Actually, the test works as follows: The rug to be used is allowed to become thoroughly dirty. It is then transferred to the laboratory floor, where a convenient area on it is blocked off with a heavy wooden frame. The blocked area is then cleaned for a measured, short time with one of the two cleaners being compared. The amount of dirt removed is measured by weighing the cleaner bag before and after sweeping the carpet area.

The second cleaner then gets its chance, and again the cleaning time and the amount of dirt removed are recorded. The same blocked-off area is then cleaned again with the first, and then the second cleaner, and the cycle is repeated a third time, so that three dirt-removal and time readings are recorded for each cleaner. The less dirt there is in a rug, the less will be removed by any cleaner in a given time. Therefore, so that sufficient amounts of dirt will be removed on the second and third cleanings to make accurate measurement possible, these subsequent cleanings are given more and more time.

A method of utilizing the readings obtained was developed which permits direct percentage comparison of the dirt removal abilities of the different cleaners. This is done by means of a separate curve drawn for each cleaner from the data for that cleaner.

The curves are drawn with the rate of cleaning (in ounces per minute) plotted against the total amount of dirt removed. It was found that the curves could best be drawn on "semi-log" paper, on which the curve is theoretically a straight line, and turns out to be practically so in actual practice.

Once curves for the two cleaners are drawn, a figure showing the percent efficiency of one cleaner, as compared with the other, is obtained by simply comparing their rates of cleaning at any given degree of dirtiness. If the two curves are straight, parallel lines, the efficiency figure will be the same, regardless of which point on the curves is used in the comparison. If, however, the two curves under consideration are either not straight or not parallel, the comparison is made at a point where the rug is relatively clean, since the consumer is interested rather in the efficiency with which the cleaner will operate to remove the last of the dirt in a rug than at the rate at which it will remove the gross surface dirt.

To increase the accuracy of the method, a second series of tests is run on another dirty section of rug with each pair of cleaners. The order in which they are used may be reversed on this run. The curves for each test are plotted separately on transparent graph paper, and the two sets of readings are roughly superimposed by horizontal movement of the graph papers. In that position, the two areas of rug on which the different series of tests were performed will, in effect, have been adjusted to equal dirtiness. A composite curve can then be drawn for each cleaner, each with six rather than three points.

So that others may use and check the CU Vacuum Cleaner Test Method, a detailed technical report is being prepared, which will be available in mimeograph form to schools and laboratories.

Heat for Comfort and Economy

CU's heating consultant tells how to improve your Winter heating, and rates brands of oil burners and controls

If you consult different home owners who have recently taken steps to improve their heating, you're likely to get some rather confusing advice on what should be done for a house which is chilly and drafty, or a heating plant which uses twice as much fuel as it should. One will tell you that the simple installation of storm windows can solve your whole problem. Another will say that storm windows make no difference; what you need is insulation of the attic and the cellar. A new heating plant, says a third, who claims that installation of a new boiler in place of his old hot-air system has made his house the warmest, and his fuel costs the lowest in the neighborhood. Buy a good oil burner, says a woman who struggled with coal shovels and ash cans for ten years; oil heat costs less, gives more comfort, and none of the dirt of coal. There's nothing like gas heating, says another home owner who discarded his oil burner because of smoke, soot and noise.

From their individual points of view, they may all be right. But they are more likely to be in the position of the person who considers a certain brand of shoes as the very best, even though he has never tried most other brands. Actually, what is good in fuel and heating equipment for one home owner may not be good for another. Much depends on how much he can afford to pay to heat his house, on the construction of the house itself, on whether uniform heat is required throughout, and on other factors.

The accompanying diagram gives a birds-eye view of the problem. To get maximum heating comfort while keeping heating costs at a minimum, the five factors listed in the diagram must somehow be taken care of. Ideally, they should be considered together, rather than independently, as they usually are.

1. THE HOUSE: On a house that is not already so treated, you can cut heat losses—and consequently, fuel bills—by as much as half if you take these measures:

a) Install a tight-fitting storm window on every window, and a tight-fitting storm door on every outside door.

b) Cut the heat loss through the roof by installing a four-inch-thick layer of rock-wool insulation in the attic.

c) Insulate the outside walls of the house by filling the air-space between the walls with rock-wool insulation.

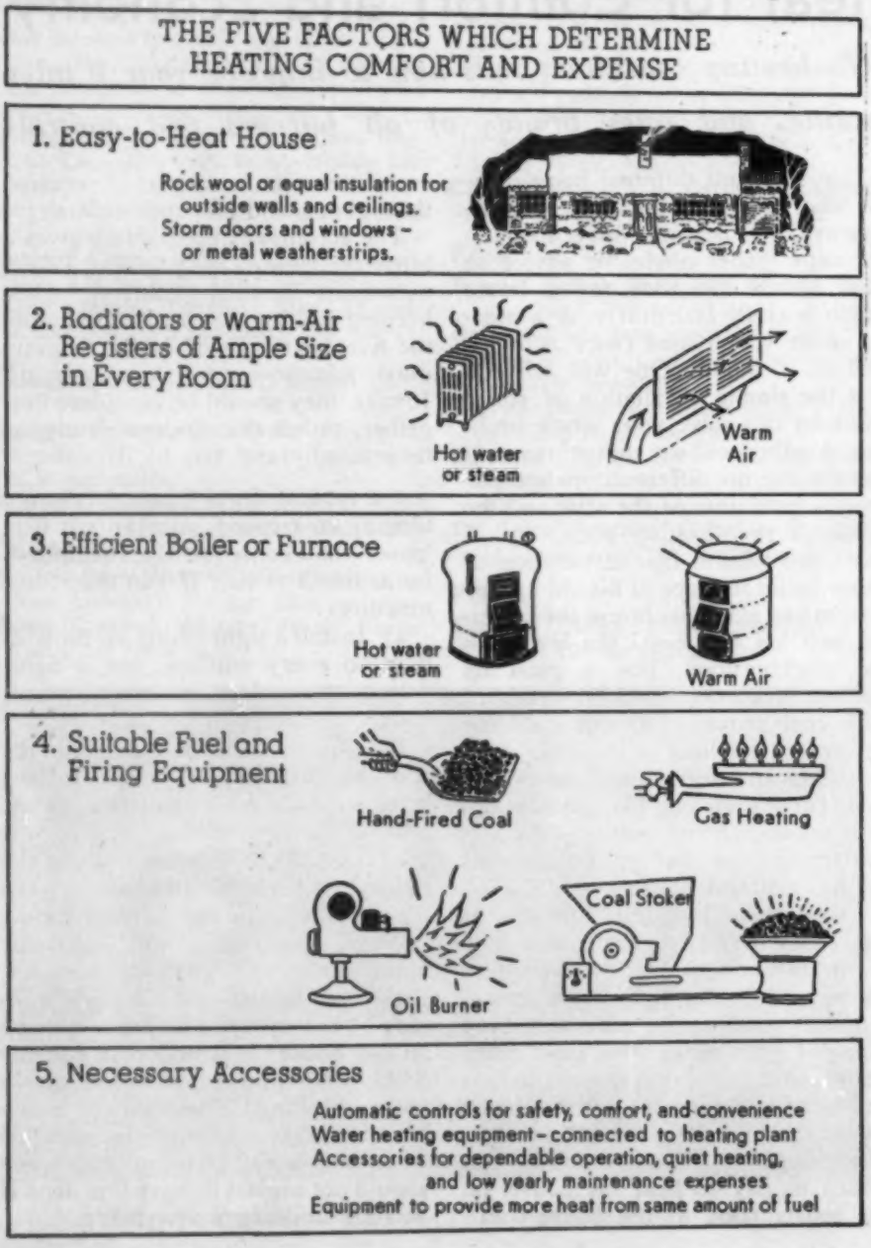
These three steps will make any house far more heat-tight. However, rock-wool insulation of outside walls may be too costly to be practicable on an old house; it would cost roughly $300 to $400 on a typical five or six room dwelling. The cost is much lower if the insulation is installed when the house is being built; you should not neglect to have this done if you are building a new home.

Attic insulation is relatively inexpensive, and if you have the time, you can probably buy the needed raw materials and do it yourself.

Storm doors and windows are far more effective than is weatherstripping, for they cut heat loss through the panes as well as air seepage through cracks and crevices. Weatherstripping is less effective, particularly if your doors and windows already are tight-fitting. But weatherstripping does cut heat loss, particularly where there are bad air leaks, it is less expensive than storm windows, and it eliminates the nuisance of hanging and removing doors and windows each year. If you decide on weatherstrips, get metal ones, and have them installed throughout the house.

2. RADIATORS AND REGISTERS: Radiators and warm-air registers must not only be big enough; they must also heat properly after the fire has been started.

You can save fuel here by attention to the distribution as well as the size of the radiators. Most persons, for instance, like the living rooms (including the room which contains the thermostat) considerably warmer than the sleeping rooms. Installation of a larger-size radiator or register in the thermostat room, or in nearby rooms which have previously been hard to heat may cut operating costs by as much as 10% to 30%. Upstairs radiators should be no larger than required to keep the rooms at the desired temperature when the downstairs rooms are warm enough.



Before making changes in the sizes of radiators, however, make sure that the radiators or registers are working properly, particularly if you have a warm air or a steam plant. Dirty or clogged valves or air ducts may be responsible for uneven heating.

If your heat is automatically controlled make sure, before you provide additional heat for the rooms near the thermostat, that this won't throw your whole system out of balance. If the thermostat gets hot before the rest of the rooms are warm enough, the fire will be turned off too soon, and the rest of the rooms may remain uncomfortably cool.

3. BOILER OR FURNACE: Regardless of the fuel you use, the furnace or boiler must be efficient if your fuel bills are to be low. In other words, the furnace or boiler must absorb most of the heat from the burning fuel, instead of allowing a high percentage of it to go up the smokepipe, or into the cellar.

The temperature of the smokepipe gases (stack temperature) can easily be determined by use of a stack thermometer, inserted into the pipe. Extensive investigation shows that a stack temperature above 500° Fahrenheit is unnecessarily wasteful. It indicates that the boiler or furnace is either of poor design or is undersize for the particular house.

4. FUEL AND FIRING METHOD: The heat a fuel is capable of giving is measured in terms of British Thermal Units (BTU). Some fuels produce more heat units per dollar spent than do others. But not all the heat a fuel is capable of developing actually goes into heating the house, as there are some unavoidable heat losses along the way. "Heating efficiency" is the ratio of the number of BTU's utilized for heating the house to the number of BTU's actually put into the plant in the form of fuel. Provided correct adjustments are made, all fuels can be utilized at about the same heating efficiency. It is true that automatic heating (oil burner, gas burner or coal stoker) generally operate at a considerably higher combustion efficiency than hand-fired coal. But the overall efficiency is usually lowered to about the same level as that obtained with hand-fired coal, as a result of the fact that the automatic firing results in intermittent operation, which is more wasteful than steady firing.

It is fair, therefore, to draw a com-

Comparative Fuel Costs

Fuel, Heat Content, Cost	Heat Units (BTU) per penny cost	Annual Fuel Cost for Heating 6-Room House*
Anthracite or Bituminous Coal, 13,000 BTU per pound.		
at $6 per ton	43,333	$ 49
at $9 per ton	28,889	$ 73
at $14 per ton	18,571	$114
Fuel Oil, 138,000 BTU per gallon		
at 7¢ per gallon	19,714	$108
at 8½¢ per gallon	16,235	$131
Natural Gas, 1000 BTU per cubic foot		
at 60¢ per 1000 cu. ft. average	16,667	$127
at 70¢ per 1000 cu. ft. average	14,287	$148
Manufactured Gas, 540 BTU per cubic foot		
at 55¢ per 1000 cu. ft. average	9,818	$216
at 70¢ per 1000 cu. ft. average	7,714	$275

* Based on use of all fuels at the same combustion and heating efficiency; see text.

parison of heating costs of the various fuels on a basis of approximately equal efficiency, as has been done in the accompanying chart, "Comparative Fuel Costs." The costs there given are based on providing the same six-room house with the same amount of heat and at the same efficiency. The use of more or less efficient equipment would, of course, make a difference in costs; the figures shown are for modern heating equipment which uses the fuels at the maximum efficiency generally obtainable in home heating.

FUEL SELECTION

The wise home owner selects his house heating fuel—and the equipment that he will need to burn it—only after careful consideration of the cost of the heat in it.

In the Northeastern States, anthracite is the most popular fuel for house heating; bituminous coal and natural gas are not generally available. Anthracite heating costs generally run about the same as those for coke, which is popular in some areas. Anthracite prices in the Northeastern area for grades which can be hand fired run about $9 to $14 a ton; stoker sizes cost less than $9 a ton. For the typical six-room house, which uses something over eight tons of coal a year, hand-fired anthracite will cost about $73 to $114 for the season.

Oil costs in the same region run somewhat higher. The oil itself may run to something like $108 to $131 a year. In addition, however, the owner of the oil burner must consider the following expenses:

a) Replacement of the oil burner about every ten years, as it wears out or becomes obsolete. This may be written off at about $15 a year.

b) Annual service and adjustment of the burner, at about $12.

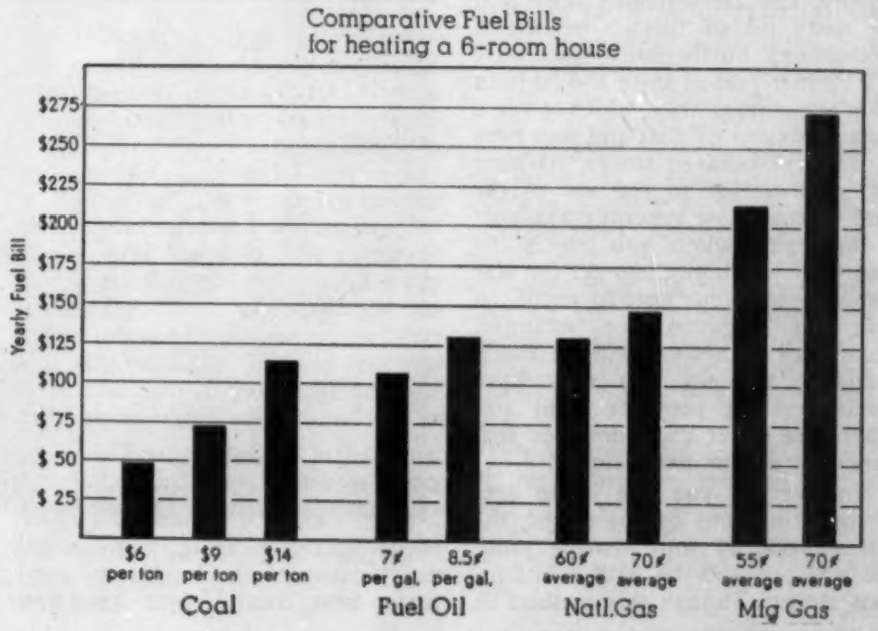
c) Electricity used by the burner, about $13 a year.

This additional $40 a year for what might be termed the "convenience factor" further increases oil heating costs over those for hand-fired coal.

Similar convenience costs must be added to your fuel bill if you make use of an anthracite stoker. While stoker salesmen like to dwell on the efficiency of stoker-fed fires, the fact is that there is little if any more heat to be gotten per ton of stoker-fed coal than per ton hand-fired—provided the firing is properly controlled. Generally the only fuel saving in stoker-firing comes from the lower per-ton cost of the coal which can be used.

Costs for heating with manufactured gas are high—as much as two and a half times the cost of heating with properly hand-fired anthracite, or about twice that of fuel-oil heat. But gas heat is undeniably quieter, more dependable, cleaner and all-around more desirable even than oil heat, and the well-to-do home owner may find it worth considering. In figuring gas costs, remember that you do not buy all your gas at the relatively low price quoted for the high-consumption rates. You may have to buy anywhere from $15 to $35 worth of fuel at high rates before the rest is sold to you on a quantity-consumption base. At that, it may cost you $216 to $275 to gas-heat your six-room house. In some cases, however, this may not turn out to be too much more than the cost of oil heating. Usually the gas company can be expected to give a certain amount of heating service without charge (and gas heating equipment needs relatively little servicing); the gas plant uses only negligible amounts of electricity (about $1 a year); and replacement is required on a gas plant far less frequently than on an oil heater.

Many home owners who had to convert from oil back to coal, and many others who have never previously used oil heating, are now anxious to replace their coal heaters with oil. Before making this conver-



sion, there are several problems to consider:

The scare-stories, predicting that the country will run out of petroleum within the next few years may safely be ignored. It is true, of course, that we are using up our oil resources, and that we cannot go on at the present rate indefinitely. But all available data point to the likelihood that the oil supply will outlast any oil burner you are likely to buy at the present time.

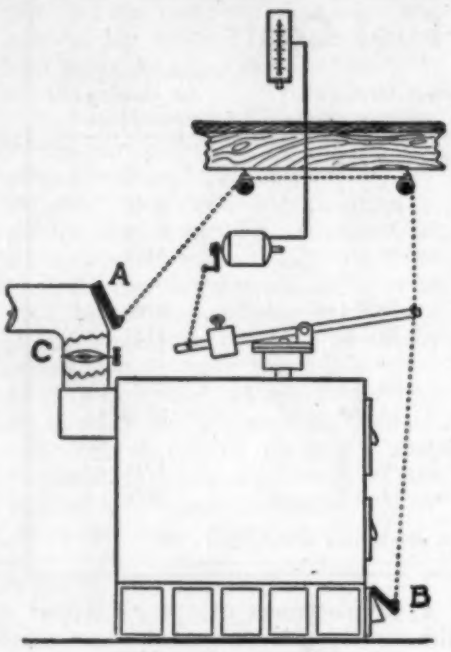
Less cheerful is the matter of the price of oil. Fuel oil prices, which advanced as much as 50% during the war period, are due to drop. But it is not likely that they will drop to prewar levels for some years. Even at that, however, it is a safe assumption that oil prices will be low enough to put oil heating at a considerably cheaper level than heating with manufactured gas.

Nevertheless, it would be unwise to buy a boiler or furnace built exclusively for oil burning. As many home owners learned during the war, some flexibility in the heating plant is of great worth during times of scarcities and changing prices.

If you are considering the purchase of a stoker, and you live in a region where anthracite is generally used for home heating, consider only an anthracite stoker; do not buy one intended for use with bituminous coal. Standard equipment for anthracite stokers includes an ash removal device, which neatly gathers the ashes and dumps them into the can for you, whereas standard bituminous coal stokers are not available with this feature, and consequently only half the nasty job of furnace-tending is mechanized. Furthermore, anthracite is a cleaner fuel to store and to burn than bituminous coal, which gives a certain amount of dust and soot even with a well-behaved stoker. Another major advantage in the use of the kind of coal most generally available in the region where you live is the ease with which you can get the size best suited to your heating needs. In anthracite regions, for example, stoker-size anthracite will be easily available, whereas you may have trouble getting just the right size (there are about 25 bituminous coal sizes) for a bituminous stoker.

However, if you live in an area where bituminous coal is mined, the best solution of your heating problem will probably be with a bituminous stoker. Though this method of heating is not quite as convenient or as clean as oil, it may cost you as little as half the cost of oil heating where locally mined stoker coal runs to about $7 a ton.

You are lucky if you live where natural gas for house heating sells at low prices. For you are among the fortunate few who are able to purchase luxury heating at what may be considerably less than the amount most people pay for the more troublesome oil heat. If you are in this position, by all means take advantage of it to solve your heating-fuel problem.



CONTROLS for COAL

Controls should include a room thermostat and a motor, which closes damper A and opens damper B when the room temperature falls one degree below the desired level, and which automatically banks the fire when the room is warm enough. The weighted control shown on the boiler above is a safety device, in case the electricity should fail while the controls are in the "Heat-On" position. It prevents development of excessive temperatures or excessive pressures in hot water or steam heating plants. Hot air plants require similar safety mechanisms.

AUTOMATIC CONTROLS FOR COAL HEATING

Even though you haven't a stoker to do your coal firing, you can still enjoy many of the benefits of automatic heat control with hand-fired coal. You can accomplish this simply by installing a thermostatic damper control. The benefits are several:

COAL SAVING: Thermostatic dampers prevent overheating caused by the fire "running away" when the basement dampers have not been properly adjusted.

WORK SAVING: Damping is taken care of automatically and correctly, as often as needed, thus saving frequent trips to and from the basement.

EVEN HEATING: You can get the smooth, even heat commonly associated with heating by stoker, oil burner or gas.

To get these benefits, however, there are certain precautions you must take after you buy your automatic damper. In the first place, it is essential that the damper be installed in such a way as to have complete control over the fire. When you lower the setting of the room thermostat, the fire should be banked completely, so that practically no additional heat comes up to the rooms. The damper alone may not be able to accomplish this; you may have to look for and seal air leaks and gas leaks in your furnace or boiler. In addition, it may be necessary to install a smokepipe damper more efficient than the one you now have.

When you raise the temperature of the room thermostat on your automatic damper, the fire should respond rapidly, and it should burn so brightly that all the rooms receive substantial amounts of heat within a half hour. The thermometer attachment of the thermostat should show a two-degree rise in the first half hour.

Try to obtain help from your coal dealer or heating contractor in making the final adjustment. He can best make the necessary adjustment with the aid of a draft gauge.

It is important that the coal be properly fired if you are to have the best results with your automatic control. The first thing each morning during the heating season, shake the grates until a scattering of live coals appears in the ash pit. Then add coal (pea coal if you use anthracite and have a good chimney draft), shovelling so much on the fire that you can't add another shovelful without some of the coal's spilling over on the basement floor. *Don't touch the dampers;* the electric controls should take care of the whole job of banking the fire. If you follow this procedure, and if your furnace or boiler is large enough

for the house, your fire will need attention only twice a day.

BEST BUYS

Sears Thermostat Cat. No. — 08870 (Sears, Roebuck). $11.95 plus postage. Includes damper motor plus kit of accessories. No clock for night set-back of temperature.

Sears Clock Thermostat Cat. No. — 08871. $21.50 plus postage. Similar to above, but equipped with a well-made electric clock and necessary accessories.

Wards Thermostat Cat. No. — 841L (Montgomery Ward). $11.95 plus postage. Plain thermostat, damper motor and kit of accessories.

ACCEPTABLE

Minneapolis-Honeywell Electric Janitor, Set Y 100A. $23. Includes plain thermostat, damper motor and kit of accessories. Of somewhat better design and construction than the *Sears* and *Wards* controls listed above, but overpriced by comparison.

Pioneer Heat Regulator (Pioneer Heat Regulator Corp., Dayton, Ohio). Price about $20. Thermostat, damper motor and accessories. Red light turns on automatically when heat is needed, but this is more decorative than useful when the regulator is properly installed.

Blue Coal Automatic Heat Regulator (D.L.&W. Coal Co., NYC). $18.95. Apparently identical with the **Pioneer Heat Regulator**, above. May be a better buy for those who use **Blue Coal**, as the coal dealer may give valuable aid in installing.

Cook Heat Control (Cook Electric Co., Chicago). Plain thermostat and damper control kit. Well designed and constructed, but uses excessive electricity as compared with other similar sets. May use up to 30 watts when the thermostat is at "On."

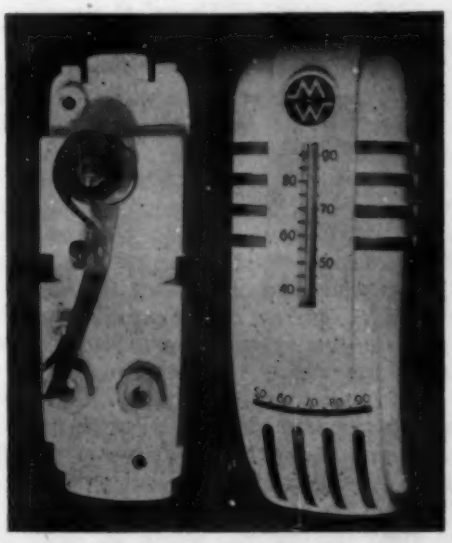
Minneapolis-Honeywell Electric Janitor with Da-Nite Acratherm, Set Y18 A. $32. Includes damper motor, kit of accessories and a special room thermostat to give automatic setting-up of heat each morning. Requires manual heat setting of thermostat each night for automatic morning adjustment. This is only semi-automatic, and not nearly so satisfactory as the $21.50 **Sears** (see "Best Buys") which does not require daily setting.

BUYING AN OIL BURNER

The most important consideration in buying an oil burner is to find a dealer who can do an excellent installation job and service work. For it is probable that any one of several hundred makes of standard pressure-atomizing gun-type burners can be made to serve you well provided it is skillfully installed and serviced. The only exception is if yours is a relatively new, very small, and unusually well-insulated house. The gun-type burner cannot be made to give a small enough flame for such houses.

Try to buy a burner which is made of standard parts. These are generally cheaper, better in over-all design and construction, longer lived, more trouble-free, and cheaper to service and replace. Furthermore, if your burner is made of standard parts, you can have it serviced by any oil-burner service man; if parts for your burner are available from one dealer only, you'll probably find yourself paying a great deal more for service when it is needed. The *General Electric* line of oil heating equipment is one of those made up entirely of special parts. Whenever anything goes wrong on a *GE* burner, you have no choice but to call the *GE* man. And you'll be in no position to bargain with him about an exorbitant service charge if he comes to fix your non-functioning heater on a zero day. You won't even be able to get the dubious satisfaction of "taking your trade elsewhere" if not satisfied.

The *Rotopower* unit (oil pump and regulating valves) which is used only on *Delco* burners, is considered by CU consultants to be inferior to the standard *Webster* or *Sundstrand* fuel units, which are used on hundreds of different makes of burners. Similarly inferior are the special oil pump units used on *Electrol, Gilbarco* and *Quiet May* oil burners. Fortunately, however, when the special parts on these three burners give trouble, you can have your serviceman switch over to the use of the superior standard parts. Of course, this switch will cost you more than if you had had standard parts to begin with, but from that point on you'll be as well off as if your unit had had standard parts in the first place.



Inside and front of the Ward Thermostat, rated a "Best Buy."

Buy a burner which is made up of these parts:

FUEL UNIT: *Webster* is best; *Sundstrand* is a close second.

CONTROLS: *Minneapolis-Honeywell* controls are the best available; *Perfex* and *Penn* are almost as good. *Mercoid* controls rate "Not Acceptable," on the score of the excessive trouble and consequent expense they cause burner owners.

ELECTRIC MOTOR: Excellent motors for gun-type oil burners are made by many well-known manufacturers including *Century, Delco, Emerson, General Electric, Leland, Ohio* and *Westinghouse*. Buy a burner equipped with a one-sixth horsepower, long-hour motor of one of these makes. CU field studies have shown that split-phase motors have a better record of trouble-free operation on oil burners than the more expensive capacitor motors, which have been considered superior by many motor specialists. For, though the capacitor motor has superior starting characteristics under heavy load, this feature is not necessary for gun-type burners, which come up to full speed quickly and do not draw much current in starting. And the capacitors on this type of motor are likely to give trouble in the course of operation.

OVERLOAD PROTECTION: The oil burner should be equipped with a device to protect the motor against burning out if, for any reason, the shaft is jammed so that it cannot turn. An overload protector of some sort, built into the motor, is best. The most satisfactory is the type which must be manually reset, rather than one which resets itself automatically. With an automatic reset, the current may turn itself off and on many times before anyone is aware that something is wrong; in the process it may fail, leaving the motor to operate and to burn out.

If you cannot obtain a motor with the recommended overload protection, have your dealer provide the motor with a special switch or delayed-time fuse known as the *Fusetron*.

Overload protectors should be checked from time to time, to make sure that they are operating. To do this, block the motor shaft so that it cannot turn, and turn on the motor current. Within a few seconds, the overload protector should turn to "Off" position, cutting the current to the stalled motor.

OTHER PARTS: The ignition transformers for use on oil burners are generally satisfactory, and you need not look for any particular brand. The same holds true for other parts used on pressure burners: atomizing nozzle, drive coupling for the oil pump, blower wheel, electrodes and insulators and electrical fittings.

When you buy an oil burner, insist that a combustion quality guarantee be written into your contract. Buy only from a dealer who will give you a written guarantee that the installation will show "a minimum of 10% carbon dioxide (CO_2) in the flue gases with the burner operating normally and dependably, and with no perceptible chimney smoke." Then, when the burner is installed, make sure that it lives up to this statement, for fuel economy and combustion quality are entirely dependent on these factors. The dealer should be willing to give you a report of the tests he makes, including percentage of carbon dioxide, draft reading and stack temperature. You should check him with repeat tests by a trustworthy outside authority. Many oil suppliers will make the test without charge; or you may have to call in a combustion expert or a heating engineer, and pay him a small fee.

Provided you get a modern pressure burner, made of standard parts, it *can* be made to operate well. The important thing is to have it installed by someone who has the knowledge and the experience to do a good job. With a given burner, there may be as much as 100% difference in fuel consumption between a good and a poor installation job.

Don't buy an oil burner on the strength of the name it carries. Many of those carrying well-known names —including American Radiator Co., Carrier Corp., Fox Furnace, Holland, Kelvinator, Norge, Tydol and Westinghouse — are made up of parts made by other manufacturers.

Pay no attention to "special features" imaginatively described and named. These include *Rotopower, Thin-Control Mix, Basket-Type Flame, Perfect Sunflower Flame, Arco-Mute Tube, Airometer Air Control, Fastemp, Progressive Rotation, Rotaire Diffuser, Aero-Diverter, Multiple Atomization, Elevated Contra-Flow, Turbometer, Turbo-Blast, Whilrator, Thrifti-Fier, Tripilator, Double-Mix Nozzle* and the like.

The Ratings

The ratings of heating equipment in this report are based not on laboratory tests, but on tests and examinations by CU consultants, of installations in actual use. When a product is rated as "Acceptable," the reader should keep in mind that the rating refers to the performance of the product when it is properly installed. As is pointed out in the article, the quality of the installation can mean the difference between a good and a bad heating system, and a good product, badly installed, might prove wholly unsatisfactory.

Oil Burner Ratings

All pressure-type gun burners made up of standard parts and sold with the 10% carbon dioxide guarantee discussed above may be considered "Acceptable." Hundreds of brands of this type are available, and only a few of the well-known makes are listed below. Prices vary from place to place, even for the same make of burner, similarly installed, so that it is impossible to give price listings. In general, you can expect to pay $275 to $325 for the complete installation, including a burner with good, standard parts to be installed into your boiler or furnace, complete controls, a 275-gallon oil tank, and one year's service. Make sure that you get a durable fire box, an automatic draft regulator for the smokepipe, and a tank gauge.

Trying to save money on installation charges by taking advantage of "bargain" rates given by someone who is not an expert is poor economy. You will find it cheaper in the long run to pay an additional $35 to $50 for a guaranteed expert initial installation.

A good pressure-type gun burner may be expected to operate with a minimum of service expense for 10 to 15 years.

ACCEPTABLE

(Listed in alphabetical order)

ABC (Automatic Burner Corp., Chicago).
Airtemp (Chrysler Corp., Detroit).
Aldrich (Aldrich Co., Peoria, Ill.).
Arcoflame (American Radiator and Standard Sanitary Corp., NYC).
Bettendorf (Bettendorf Oil Burner Co., Marshalltown, Ill.).
Caloroil (Caloroil Burner Corp., Hartford, Conn.).
Esso-Heat (Gilbert & Barker Mfg. Co., Springfield, Mass.).
Fluid-Heat (Anchor Post Fence Co., Baltimore).
Gar Wood (Gar Wood Industries, Detroit).
Gilbarco (Gilbert & Barker Mfg. Co.).
Heil (Heil Co., Milwaukee).
Kleen-Heet (Kleen-Heet, Inc., Chicago).
National (National Radiator Corp., Johnstown, Penna.).
P agon (Paragon Oil Burner Corp., Brooklyn).
Petro (Petroleum Heat & Power Co., Stamford, Conn.).
Quiet Heet (Quiet Heet Mfg. Co., Newark, N. J.).
Rexoil (Rief-Rexoil, Inc., Buffalo, N.Y.).
Silent Glow (Silent Glow Oil Burner Corp., Hartford, Conn.).
Silent Heet (Silent Heet Oil Burner Co., Brooklyn).
Timken (Timken Silent Automatic Co., Detroit).
Toridheet (Cleveland Steel Products Corp., Cleveland).
Williams (Williams Oil-O-Matic Division, Eureka Vacuum Cleaner Co., Bloomington, Ill.).

NOT ACCEPTABLE

Delco (Delco Appliance Division of General Motors). The "Roto-Power" oil pump unit is combined with a special electric motor, and experience shows it to be troublesome. Not easily fitted with standard fuel units made by Webster or Sundstrand. Service expenses run high; should be serviced by Delco dealer only.

Electrol (Electrol, Inc., Clifton, N. J.). Special "Master Control" system not as safe as other standard oil burner controls. Burner has special oil pump, pressure regulating valve and shut-off valve, but these can be replaced with standard parts to improve unit.

General Electric (General Electric Co.). Can be serviced only by General Electric oil heating equipment dealers because of its unusual operation principles, special controls and specially designed parts. Maintainance and replacement costs high.

Masterkraft (Harvey-Whipple, Inc., Springfield, Mass.). "Borcontrol" feature, supposed to give added protection against explosion, actually gives little protection and often gives trouble as the result of flimsy construction. "Tripilator" feature, supposed to save fuel, has no such effect. Price unjustifiably high with these special features; would be "Acceptable" without "Borcontrol."

Quiet May (Gerotor May Corp., Baltimore). Sold at a premium price because of "special features" which actually detract from rather than add to worth. "Gerotor" oil pump not as satisfactory as standard makes; "jewel tipped" nozzle no better than stainless steel. These features make servicing difficult for service-men not familiar with them. Would be "Acceptable" with standard parts.

Sears Roebuck Hercules (Sears, Roebuck). A satisfactory oil burner, but engineering, installation and service supplied in many communities is of low grade.

VAPORIZING BURNERS

Vaporizing ("pot-type") oil burners are "Not Acceptable" for installation in boilers or furnaces originally designed to burn coal. Thus installed as "conversion burners," they generally perform poorly, tend to break down frequently, and produce smoke, soot and chimney fires. They require the use of special high-priced fuel oil or kerosene.

If you already have a furnace or boiler and want to convert it to oil, do not buy a pot-type or vaporizing burner; instead get a pressure-type gun burner or a vertical rotary burner.

Vaporizing burners built as part of small warm-air furnaces can give satisfactory performance, though they are not as good as pressure-type gun burners, even at their best. They are, however, peculiarly suited to very small well-insulated houses for which the gun burners may be too large.

An advantage of the pot-type burner, in conjunction with a warm-air furnace, is its low price. Because of this, such a system is often installed in low-cost homes for which the selection of heating equipment may be a troublesome problem. Under such circumstances the owner may be inclined to tolerate the shortcomings of the pot-type burner with greater indulgence than if he had paid the standard price for oil-heating equipment.

CU consultants have not yet been able to gather sufficient data on warm-air furnaces with built-in pot-type burners to permit ratings of the various makes. But the following tentative findings may prove helpful to home owners who are considering the use of this type of equipment:

If your home is large enough to take the standard pressure-type gun burner, buy it in preference to the pot-type burner which comes as an integral part of a warm-air furnace. With it, buy a warm-air furnace which is efficient for oil.

If you are looking for the best in oil heating for a house which is too small for a pressure-type gun burner, and if you can afford to do so, buy a vertical rotary burner or a low pressure gun burner in preference to pot-type vaporizing burner equipment. Acceptable low-pressure gun burners are:

Williams Oil-O-Matic (Williams Oil-O-Matic Division, Eureka Vacuum Cleaner Co., Bloomington, Ill.).

Hart (Hart Oil Burner Corp., Peoria, Ill.).

Representative pot-type equipment is offered by the following:

Airtemp (Chrysler Corp., Detroit).

Coleman Lamp and Stove Co., Wichita, Kan.

Duo-Therm (Motor Wheel Corp., Lansing, Mich.).

Norge (Borg-Warner Corp., Detroit).

Monogram (Quincy Stove Mfg. Co., Quincy, Ill.).

L. J. Mueller Furnace Co., Milwaukee.

Quaker Mfg. Co., Chicago.

Superfex (Perfection Stove Co., Cleveland).

Tentative data, obtained from field investigations, indicates that good results (for this type of burner) may be had from the *Coleman* installation. While the burner is not outstandingly good on the *Monogram*, it is otherwise excellent, and gives exceptionally good heating with low fuel bills.

To get best results from a warm-air furnace fitted with a pot-type vaporizing burner, certain rules should be followed:

a) Take special care to use only light fuel oil, especially suited to the burner. It is best to buy the oil from companies which specialize in oil for burners of this type.

b) Get the best available serviceman when attention is needed.

c) Learn to know the burner, preferably from a good service-man. Then inspect the furnace and the burner regularly, adjust the flame as needed, keep soot and carbon cleaned out from the places where it might interfere with proper burner operation and high efficiency.

Floor furnaces equipped with pot-type burners are "not acceptable." If you plan to build a no-basement home, you will do better not to include a floor furnace in your plans. Instead, you might provide a utility room in which the furnace can be located, or arrange to have the furnace in an attached garage.

VERTICAL ROTARY BURNERS

Vertical rotary burners are relatively high priced, and are usually not as good buys as pressure-type burners. They have the additional disadvantages of being highly sensitive to improper-grade fuel oils, and of requiring special servicing from experts who are familiar with burners of this type. However, these vertical burners are excellent for homes where quiet operation is important; compared to gun-type burners, they are practically noiseless. Furthermore, in certain heating plants (not all of them) they run lower fuel bills than gun-type burners, even though they may use higher-priced oil.

But most important, the vertical rotary burners are well suited to the new styles of very small, well-insulated homes, for which the pressure-type burners cannot be adjusted to give small enough flames. For the best in oil-heating a small home which is well insulated, the vertical rotary burner or the low-pressure gun burner may be installed.

You may want to consider the installation of this type of burner in one other circumstance: If the most competent dealer in your vicinity prefers vertical rotary burners to the usual gun-type, it may be wisest to buy one. The fact is that a vertical rotary burner runs well only when it is installed and serviced by an expert. Consequently it sometimes works out that the local dealer who knows most about oil burners handles only rotary equipment.

ACCEPTABLE

(In alphabetical order)

Fluid Heat (Anchor Post Fence Co., Baltimore).

Hayward (Hayward Mfg. Co., B'klyn).

Timken (Timken Silent Automatic Co., Detroit).

Toridheet (Cleveland Steel Products Corp., Cleveland).

NOT ACCEPTABLE

ABC (Automatic Burner Corp.). When equipped with electric ignition, this burner may prove troublesome; it sometimes starts so violently as to throw open the boiler doors. Gas ignition models increase gas bills unnecessarily. Burner lacks the standard oil burner blower wheel, depending on the natural draft from the chimney. This varies considerably depending on whether the chimney is hot or cold. Because of its unusually high speed motor it can be serviced only by service-men familiar with installations of this type. Repair costs generally high.

HEALTH AND MEDICINE

High Blood Pressure

Little is known of its cause or its cure, CU's Medical Adviser reports. This article discusses some important aspects, and clears up some popular misconceptions on the subject

A blood pressure measurement with a "sphygmomanometer" or blood-pressure apparatus is so integral a part of a physical examination that no examination is considered complete without it. Unfortunately, unwarranted deductions are too often drawn from the reading by the patient (and sometimes by the doctor). Certainly a single blood-pressure determination, performed under usual office conditions, is of much less significance than is usually assumed. Blood pressure, like any other expression of activity of the human body, is not a stable, fixed thing, but varies from one normal individual to another, and above all, it may vary a good deal in the same individual at different times and under different conditions.

WHAT IS BLOOD PRESSURE?

Blood pressure reflects the effects of the activities of many organs and tissues of the body. The state of the small and the large arterial vessels, the rate and force of the heart beat, the character of the blood and the respiration, and above all, the emotional condition of the individual, all have important effects on the level of the blood pressure in normal persons and in those with high or so-called low blood pressure.

The popular notion that a person's "normal" blood pressure is his age plus 100 is not correct. In the first place, a blood pressure reading really consists of two figures, the higher called systolic and the lower called diastolic. The diastolic pressure is the more significant reading of the two, and it is never as high as age plus 100 in a normal individual. (The diastolic pressure represents the state or "tonus" of the smaller arteries of the body; systolic pressure represents chiefly the effects of the pumping action of the heart, plus the elasticity of the larger arteries.) Furthermore, many doctors have found, in studies of large groups of normal persons, that the blood pressure may vary by as much as 40 millimeters of mercury in the same person. That is, a single normal individual may have a systolic blood pressure of 95 at one examination, and a little later, in other circumstances, may have a systolic blood pressure of 135. Yet the patient has neither high nor low blood pressure.

DIASTOLIC PRESSURE STEADIER

Diastolic blood pressure is much less variable than the systolic pressure. A rise in the diastolic pressure to about 90 millimeters or more may indicate an early stage of high blood pressure or "hypertension." A *persistent* systolic blood pressure of 140 or more may also indicate a tendency to hypertension. It must be emphasized, however, that a reading of 140 or more must be persistent over a period of time before it is of significance. Many normal persons who will never get high blood pressure have a systolic pressure over 140 on occasion.

Hypertension itself is not a disease. It is a symptom of many diseases. It occurs in persons with disease of the kidneys, blood vessels or endocrine glands. Despite a great deal of work in this field, in the great majority of cases of hypertension, no known cause can be found, and the disease is then named "essential [unknown cause] hypertension."

At one time it was thought that essential hypertension was due to organic changes in the kidney. In 1934, Dr. Harry Goldblatt and his associates performed the first important experimental work on the relationship between the kidney and hypertension. By means of a special metal clamp, they constricted the main arteries of the kidney of a dog, with resultant persistent hypertension. Later it was shown that the hypertension was due to the secretion of a "pressor" substance by the kidney. However, *direct* attempts to demonstrate the presence of the substance in the blood of experimental animals or in patients with hypertension have so far been unsuccessful. Nor has it been shown that operation on a kidney or injection of extracts from a kidney will cure or relieve essential hypertension.

ATTEMPTS AT TREATMENT

The most important objective manifestation of essential hypertension is the elevated blood pressure, and it is towards this manifestation that most treatment is directed. It must be kept in mind, however, that medical treatment can be rational only if it is directed towards ultimate cure. Attempts to treat essential hypertension with drugs or medicines aimed solely at lowering the blood pressure neglect the basic fact that the elevated blood pressure is simply the expression of a fundamental fault, which continues to operate despite lowering of the blood pressure. Attempts to depress the blood pressure by the use of hormones, tissue extracts, vitamins, electrical treatments and various drugs have either been unsuccessful, or they have pro-

duced a brief, transient depression of blood pressure; some have even caused harm.

The failure of conventional medicine to cure hypertension has made many physicians sensitive to the possible contributions of psychiatry towards an understanding of the mechanism of hypertension and towards a possible cure. It is well known that anxiety and rage can cause a temporary elevation in blood pressure in any normal individual. Dr. Walter C. Cannon was among the first to show the effects of primitive emotional feeling on the functioning of various organs, and on the body as a whole. With the rapid advance of psychiatry as a specialized phase of medicine, and with the newer insights into emotional disturbances provided by this specialty, it seemed possible to hope that psychoanalysis or psychiatry could yield new light on the mechanisms of hypertension. The hope has not been fulfilled so far.

EFFECT OF EMOTIONS

While it is recognized that adverse nervous and emotional influences can affect blood pressure, no specific pattern of emotional disturbance or of personality has been proved to be associated with essential hypertension. It is important for a person with hypertension to strive for those measures of moderation in living which tend to diminish nervous tension. It is another matter, however, to recommend to the affected person that he submit to intensive psycho-therapy by a trained psychiatrist with a view to lowering his blood pressure. Undoubtedly such treatment can help reduce inner nervous tensions, make the patient "better adjusted," and thus lessen the tendency towards outward or repressed anxiety and rage. But there is no evidence that intensive psycho-therapy or psychoanalysis can appreciably halt the progress of essential hypertension or affect its course.

Moderation in living can do more for hypertension than any drug or course of treatment. This does not mean an abandonment of career and relationships. It simply means doing most of the things one ordinarily does, but at a slower, more leisurely pace. Excesses of any kind—in work, exercise, eating, drinking, alcohol and in sexual relationships—must be avoided. Regular discussions with a competent and sympathetic physician will help to provide reassurance and guidance.

No specific diets are necessary. Obesity must be combatted, since it tends to cause heart trouble. In the ordinary uncomplicated case of hypertension, there is no need to avoid meat or salt; only in certain complications is there need to avoid these foods. Of the drugs prepared for the relief of symptoms, the sedatives are most useful. But their use must be regulated and supervised by a physician.

With such a regimen of treatment, it is possible for a person with early or mild hypertension to live a normal span of years in good health. It should be unnecessary to warn that special "health foods," garlic juice, and other assorted products of folklore and commercial ingenuity have no beneficial influence on the disease.

Of the symptoms of essential hypertension, headache is perhaps the most common and the most liable to misinterpretation. Because a headache is present with hypertension does not mean that the headache is the result of the elevated blood pressure. The headache may be caused by certain anxieties or tensions that have nothing to do with the hypertension. Headaches occur fairly commonly in persons with normal blood pressure, and, as has previously been pointed out in these pages, they are more commonly caused by emotional disturbances than by any other factors.

Furthermore, even if the headache is directly attributable to the hypertension, its severity is not necessarily proportional to the height of the blood pressure or the existence of other complications. Attempts to lower the blood pressure with certain drugs often result in more severe headaches than existed with the original, higher pressure. Probably the best medical measures for diminishing headaches in essential hypertension are rest and the judicious use of sedatives.

In recent years, certain cases of essential hypertension have been treated by surgical operations on the "sympathetic nervous system." These operations are extremely radical, and require the highest kind of surgical skill and hospital team-work. A few surgeons in the largest medical centers of the country have been performing such operations during the past few years with good results in carefully selected patients. However, most investigators feel that a few more years of continued observation are essential before definite conclusions can be drawn about the value of "radical sympathectomy" in producing either prolonged lowering of blood pressure or relief of symptoms.

There is perhaps more confusion about "low blood pressure" in the public mind than there is about hypertension. A tendency to a so-called low systolic pressure—below 110 or so—may run in certain families. It has no significance with respect to susceptibility to acute or chronic disease of the heart or blood vessels. Actually, a systolic pressure of 100 or so is not abnormally low. It simply represents one extreme of blood pressure readings that in "normal" individuals may vary from 90 to 140. Too often it is assumed that symptoms such as fatigue and weakness, occurring in persons with low blood pressure, are a result of that low pressure. There is usually only a coincidental connection between the blood pressure and the symptoms.

"For the People's Health"

An excellent pamphlet, "For the People's Health," recently published by the Physicians Forum, should be "must" reading for those who are interested in the problem of medical care and what can be done to improve its quality and availability. In clear, convincing terms, "For the People's Health" discusses the shortcomings of our present pay-as-you-go medical system, and what it means to patients and doctors. Then it gives a simple analysis of the health provisions of the Wagner-Murray-Dingell social security bill, and tells how our hit-or-miss medical care could be improved.

Copies of the booklet may be obtained by writing to the Physicians Forum, 510 Madison Avenue, New York 22, N. Y.

GI Insurance Benefits

Minor changes would make a big difference in the protection these policies afford to veterans and their families

This is the second of two articles by E. A. Gilbert on GI insurance. In the first (see the Reports, *August* 1945), *Mr. Gilbert recommended this government insurance as a "Best Buy" for those who are eligible, and gave advice on how and when the veteran might convert to various forms to best advantage.*

* * *

Any cost comparison of National Service life insurance policies with comparable contracts from private insurance companies shows an incontestible advantage in favor of the GI contract. Its lower cost, higher cash value, superior benefits and more attractive interest guarantees make it far and away the best buy for those who need insurance and are eligible to use it.

At the same time, it cannot be ignored that the National Service contract, as it is now written, has a very serious disadvantage in the matter of settlement options. It seems likely that this flaw will be temporary, and that it will be remedied as veterans' organizations call on Congress for remedial action. In fact, it is altogether probable that Congressmen will vie with one another for the privilege of being the first to introduce legislation beneficial to the veteran and his family—with no political strings attached.

DISSATISFACTION SHOWN

As things stand now, however, GI Joe is apparently far from satisfied with his policy as a means of peacetime protection. The Veterans Administration reported recently that only one of every fifteen discharged veterans is continuing his National Service life insurance. These figures have so distressed the Veterans Administration that General Omar Bradley, top Administrator, is said to have flown from Washington to New York to discuss the matter with an advisory group of insurance leaders. Spokesmen for the Administration hinted that perhaps additional inducements should be offered to the veteran to assure a higher rate of continuance of his National Service insurance, following discharge from service.

At this writing, it is not yet known whether the proposed meeting has taken place, nor what, if any, additional "inducements" are to be offered. But whatever action the Veterans Administration decides upon, it should include liberalization of the limited settlement options now written into the policy.

Past practice, whether in private or government insurance, has always been that, once a policy matures as a death claim, the beneficiary decides the manner in which the proceeds are to be paid. To implement this, a number of standard optional modes of settlement have always been written into life insurance contracts.

OPTIONS FOR SETTLEMENT

The first option is a lump-sum settlement. Under this option, either the insured or his beneficiary can elect to have the face amount of the policy paid in full upon his death. In other words, if this option existed in National Service insurance, an *immediate* payment of $10,000 would be made to the beneficiary of the veteran holding a $10,000 policy upon his death. But no lump-sum payment option is included in the National Service life insurance contract.

In this needless restriction lies the cause for a great deal of confusion and considerable dissatisfaction among beneficiaries. There is no actuarial justification for this restriction. This is clearly shown by the fact that all contracts issued to servicemen during World War I, and all contracts sold by private companies, contain the lump-sum payment option. The exclusion of this option can cause real hardship to the beneficiaries of veterans' insurance.

At the present time, two settlement options are available to beneficiaries of GI insurance: a guaranteed monthly income over a specified period, or an annuity for the lifetime of the beneficiary. Undoubtedly these options serve useful purposes in some cases; in fact they are included as alternatives for the lump-sum method of settlement in all policies. But they should not be the only available choices for those whose needs they do not fill.

The first option—a guaranteed monthly income for a specified period—is mandatory for all beneficiaries who are less than 30 years old at the time of the death of the veteran. The monthly income under this option is $5.51 for each $1000 of insurance, to be paid over a twenty-year period. Thus, the beneficiary of a $10,000 (maximum available) policy, who is under the age of 30 at the time of death, would receive $55.10 a month over twenty years.

DRAWBACKS OF OPTION

Obviously a widow with no other funds can not subsist on this meager income. And, while it might be comforting for some beneficiaries to know that they will have a small but assured income for the next twenty years, there will be many others whose financial situation may be such following a death, that a more flexible program allowing unlimited use of the principle sum would be imperative.

The lump-sum payment would make it possible for many beneficiaries to embark on business ventures which, if successful, might be counted on as sources for future income. Obviously, in these circumstances, a cash settlement would be far preferable to a small monthly income.

A second option in the National Service policies—mandatory for beneficiaries over 30 years of age at the time of veteran's death—will prove even more unsatisfactory in many cases. This is a conventional life annuity, to be paid monthly for the lifetime of the beneficiary. Payment is guaranteed for a minimum of ten years to the original beneficiary or heirs; beyond ten years, no further payments are made if the original annuitant (beneficiary) dies.

The amount of the monthly payment under this option depends upon the age of the annuitant at the time the contract matures as a death claim.

The older the beneficiary at this time, the higher will be the monthly income since, according to the life expectancy tables, the older individual has fewer years to live, and hence fewer payments will have to be made. Conversely, the younger the annuitant, the smaller the monthly income per $1000 insurance.

The actual monthly income which is paid at the various ages is indicated in the following table, which is based upon the American Experience Table of Mortality, with interest at the rate of 3% a year:

Age of beneficiary at date of death of insured	*Amount of each monthly instal'ment per $1000 of insurance*	*Age of beneficiary at date of death of insured*	*Amount of each monthly instal'ment per $1000 of insurance*
30	$3.97	58	$6.49
31	4.01	59	6.65
32	4.06	60	6.81
33	4.10	61	6.98
34	4.15	62	7.15
35	4.20	63	7.32
36	4.26	64	7.50
37	4.31	65	7.67
38	4.37	66	7.84
39	4.43	67	8.02
40	4.50	68	8.19
41	4.57	69	8.35
42	4.64	70	8.51
43	4.72	71	8.66
44	4.80	72	8.80
45	4.89	73	8.94
46	4.98	74	9.06
47	5.08	75	9.18
48	5.18	76	9.28
49	5.28	77	9.37
50	5.39	78	9.44
51	5.51	79	9.50
52	5.63	80	9.55
53	5.76	81	9.58
54	5.90	82	9.60
55	6.03	83	9.61
56	6.18	84	9.61
57	6.33	85	9.61

All the objections raised against the first option apply with at least equal force against the second. As a matter of fact, even greater injustices may result, depending on the needs and the health of the beneficiary forced to accept this method of payment.

Any beneficiary under the age of 30 at the time of the death of the veteran is guaranteed a monthly income of $5.51 per $1000 of insurance for a period of twenty years. If the beneficiary should die during this twenty-year period, the balance of the payments are made to a contingent beneficiary. Thus, the wife of a veteran who had died at the time she was 25 years old, and who had a $10,000 contract in force at the time of death, would be guaranteed payment of $55.10 a month for 20 years. The total amount she would receive over this period would be $13,224.

This total of $13,224 is *guaranteed.* It represents simple amortization of principal and interest, at 3% over the specified period. Therefore, should the beneficiary mentioned previously die at the age of 35, after receiving only ten years' income ($6612), the option provides for the continued payment of the monthly income for an additional ten years to the contingent beneficiary. If she had any children, they would be assured of a monthly income for ten years following the mother's death, receiving $6612, the balance of the guaranteed payments.

For a beneficiary over the age of 30 at the death of the insured, the picture is entirely different. Suppose the wife is just 30 years old at the time of the death of the veteran. In such a case, the second settlement option would be mandatory. According to the table above, the monthly income for a beneficiary at age 30 would be $39.70 for $10,000 of insurance. This income would be *guaranteed* for ten years only (regardless of whether the annuitant dies during this period), and as long thereafter as the annuitant lives.

If, then, the beneficiary receiving income under this option died during the ten-year period, the maximum amount she and her heirs would receive would be $4764. On a $10,000 contract, this would represent a loss to the veteran's estate of $5236.

COMPARATIVE BENEFITS

The total amount of payment guaranteed under Option I is $13,224. Under Option II, a 30-year-old beneficiary would not collect the amount guaranteed under the first option until 28 years had passed. Of course, if she lived beyond her 58th year, the beneficiary would ultimately receive more than the amount guaranteed under Option I.

This is not to say that there is anything wrong about the principle of life annuity. For those who can afford a policy of the magnitude required to provide an adequate monthly income, the annuity is an effective solution to providing a guaranteed income for life. Moreover, the annuity granted in National Service contracts is vastly superior to anything available from private insurance companies. But it is not possible to take out sufficient National Service insurance to provide an adequate income from this source alone. Consequently, though the life-annuity has its proper place in any life insurance policy as an *optional* mode of settlement, it should not be the only settlement option.

It is true, of course, that many veterans will have other insurance contracts in force, in addition to other sources such as savings and trust funds, from which income will be paid to their dependents. Moreover, social security benefits will provide some additional income to their beneficiaries in many cases. In such cases, the annuity option may fit admirably into the over-all protection program of the veteran.

Unfortunately, not all veterans will be so well situated, however. For many, their GI insurance plus, possibly, very small social security payments, will provide the sole source of income. Families in this position cannot afford the luxury of a small guaranteed income for life; the best they can hope for is enough income to meet necessities for a few years following death. It is for them that a cash settlement option is needed.

POOR RISK IN ILL HEALTH

Another point which must be considered in connection with the annuity principle is the health of the beneficiary. An annuity is of little practical value to the beneficiary whose health is impaired, and whose life expectancy may be correspondingly shortened. Annuities are worth while only to those who have reasonable expectation of living to a "ripe old age."

There may be genuine tragedy in the case of the veteran who has a sick wife. For on his death, the small income from his insurance certainly will not provide enough for her needs, and she will be unable to supplement it with a job. Furthermore, a sick person needs a higher income than one who is healthy, for to ordinary everyday expenses must be added the costs of medical care. In its present form, National Service insurance ignores this very real and important situation.

The conclusion is clear. If veterans are to be encouraged to retain their GI insurance, they must be offered adequate protection for their families. And for adequate protection, it is essential that settlement options be liberalized to include lump-sum payment of the face value of the policy.

CUMULATIVE INDEX

Each issue of the Reports contains this cumulative index of principal subjects covered since publication of the 1945 Buying Guide issue. By supplementing the Buying Guide index with this one, members can quickly locate current material and keep abreast of changes resulting from new tests. Page numbers run consecutively beginning with the January 1945 issue Jan. 1-28; Feb. 29-56; Mar. 57-84; Apr. 85-112; May 113-140; June 141-168; July 169-196; August 197-224; September 225-252; October 253-280.

Reports starred replace or supplement material in the 1945 Buying Guide.

Statement of Ownership, Management, Circulation, etc., Required by the Acts of Congress of August 24, 1912 and March 3, 1933

Of *Consumer Reports* published *monthly at New York, N. Y., for Oct. 1, 1945.*

STATE OF *New York* } SS.
COUNTY OF *New York* }

Before me, a *notary* in and for the State and county aforesaid, personally appeared *Madeline Ross,* who, having been duly sworn according to law, deposes and says that he is the *editor* of the *Consumer Reports* and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of Publisher: *Consumers Union of U. S., Inc., 17 Union Square West, NYC, 3.*

Editor: Madeline Ross, *17 Union Square West, NYC, 3.*

Managing Editor: *None.*

Business Managers: *None.*

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

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5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is ..... (This information is required from daily publications only.)

Madeline Ross, Editor

Sworn to and subscribed before me this *fourth* day of *October, 1945.*

George Shibuk, Notary Public.
(My commission expires *March 30, 1946.*)

GROUP ACTIVITY

FOR SCHOOLS AND YOUTH GROUPS - MEN'S AND WOMEN'S GROUPS - UNIONS AND AUXILIARIES

Susan Brothers, Group Editor

The Price of Things

It's certain to be higher, but there are some steps the consumer can take to protect his dwindling pocketbook

We are on the verge of a new period—the Reconversion Period. War production lines are being transformed into consumer goods production lines, and from them are coming washing machines and vacuum cleaners instead of tanks and guns. The advertising departments have already sharpened their pencils; they are turning out copy filled with postwar super-superlatives. And the OPA proclaims that it is holding the line against inflation.

HOW MUCH?

Actually, new consumer goods won't be on the market in any quantity until about Christmas. But consumers can't help wondering, even now, what reconversion will really mean to them. They know that it means the appearance of commodities they haven't been able to buy during the war years, from egg beaters to automobiles. But what they still haven't found out is, *how much will they cost.* The answer, unfortunately, is all too simple: They will cost more.

OPA's Reconversion Pricing Program, according to its own statement, is "very flexible." It provides the machinery by which both industries as a whole and individual manufacturers within the industries can get price increases. OPA politely refers to these increases as "adjustments."

A formula provides all producers within an industry with a so-called increase factor, which is, in effect a percentage by which any firm in the industry may raise its 1941 ceiling prices. The factor is worked out by OPA on the basis of production cost figures provided by the entire industry. Critics of the system point out that it has not been unknown, in the past, for the members of an industry to work in collusion, to supply padded figures. And it is not impossible that, with higher prices as the prize, members of an industry might not again work together for their mutual benefit. And on top of this, the OPA Reconversion Pricing Program provides for additional adjustments for manufacturers who claim that, in spite of industry increases, they are still suffering hardship.

ATTACK ON OPA

Despite these liberal price "adjustments," OPA is being attacked by manufacturers, wholesalers and retailers who want even wider margins. Manufacturers want a bigger increase factor. Distributors claim they have been caught in a "squeeze" which forces them to pay higher prices for the things they buy while selling them at the same old price. OPA, on the other hand, points to the fact that wholesale and retail profits have risen 40% over their 1941 level, and says that these distributors can easily absorb the squeeze. But it is quite conceivable that OPA will have to yield unless consumers give voice to vigorous protest.

OPA's Labor Policy Committee protested against the Reconversion Price Plan as long ago as last April, labeling it "a price raising formula." The Committee pointed out that in granting price rises, OPA ignored price-reducing factors such as increased labor productivity and reduced selling costs. The greater productivity—an outcome of techniques and materials perfected during the war—resulted in great savings and lower production costs. These same techniques and materials will be carried over into the production of consumer goods. It would seem only just that the savings they bring about should be passed on to the consumer.

PRE-TICKETED GOODS

One good feature of the OPA program is the requirement that most goods be pre-ticketed by the manufacturer with the retail selling price of the product. This makes it easy for the consumer to check and make sure that he is not paying above-ceiling prices for his new merchandise. Unscrupulous merchants will, of course, continue to find means to evade ceiling prices. One dodge, already in use, is to charge the labeled price for the merchandise, but to require a little something on the side to put the customer's name at the top of the waiting list. Another technique is to demand that you turn in your old appliance when you get the new one, but to allow little or no trade-in value for it. Remember that, war or no war, dealing on the black market is just as reprehensible as it ever was.

STILL NO STANDARDS

As in the prewar days, consumers remain at a disadvantage because there are no quality standards set on the new merchandise. Most consumers still have no way of telling which of the available brands is the best buy. In fact, the situation is worse than it was before the war, for supply will exceed demand for some time to come, and the competition factor will not operate even to the extent it did before to force improvement in quality.

Now, more than ever, let the buyer beware.

CONSUMERS UNION
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